CURTIS'S

BOTANICAL MAGAZINE,

COMPRISING THE

Plants of the Royal Gardens of Kew

AND

OF OTHER BOTANICAL ESTABLISHMENTS IN GREAT BRITAIN;

WITH SUITABLE DESCRIPTIONS;

BY

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VOL. XXVII.

OF THE THIRD SERIES;

(Or Vol. XCVII. of the Whole Work.)

Since flowers have their allotted hour,
When all their charms must fade away,
Art must exert her skill and power
To save their beauty from decay.—*P. H. H.*

LONDON:

L. REEVE & CO., 5, HENRIETTA STREET, COVENT GARDEN.

1871.

Mo. Bot. Garden,

1897.

SHOUT
SHARE
IT

TO

ISAAC ANDERSON HENRY, ESQ., F.L.S.

My Dear Sir,

Your frequent contributions to the "Botanical Magazine," especially of Andean plants raised by yourself from seeds communicated by our indefatigable friend, Professor Jameson (late of Quito), your well-known skill as a Horticulturist, and your liberal patronage of that art, render it no less a duty than it is a pleasure to offer you the dedication of a volume of this work.

Believe me,

My dear Sir,

Most faithfully yours,

JOS. D. HOOKER.

Royal Gardens, Kew,
Dec. 1*st*, 1871.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5878.

ONCIDIUM TIGRINUM, VAR. SPLENDIDUM.

Native of Mexico.

Nat. Ord. Orchideæ.—Tribe Vandeæ.

Genus Oncidium, *Swartz ;* (*Endl. Gen. Pl.*, vol. i. p. 203).

Oncidium (Homœantha) *tigrinum ;* pseudobulbis ovatis ovato-rotundatisve compressis 2-phyllis, foliis oblongo-linearibus obtusis basi angustatis, racemo elongato volubili, bracteis parvis appressis, floribus amplis, sepalis liberis petalisque lineari-oblongis recurvis undulatis flavis brunneo-fasciatis, labelli flavi lobis lateralibus parvis $\frac{1}{2}$-orbicularibus intermedio amplissimo breviter late unguiculato transverse late oblongo emarginato, ungue basi bituburculato v. 2-carinato cum crista brevi intermedia elongata, columnæ alis patentibus obtusis.

Oncidium tigrinum, *Llav. et Lex. Orchid. Mex.*, p. 36. *Lindl. Gen. and Sp. Orchid.*, 203. *Fol. Orchid.*, n. 157.

Oncidium Barkeri, *Lindl.* in *Bot. Reg.*, 1841. *Misc.* n. 174. *Sert. Orchid.* t. 48. *Paxt. Mag.*, vol. xiv. p. 97. *Lemaire, Ill. Hortic.*, 1854, t. 2.

Odontoglossum tigrinum, *Lindl.* in *Fol. Orchid.*, n. 157.

Var. *splendidum*, major, floribus amplissimis, labelli lobo intermedio $1\frac{1}{2}$-poll. lato, lateralibus vix $\frac{1}{4}$ poll. latis.

Oncidium splendidum, *A. Rich. ex Duchartre* in *Journ. Soc. Imp. Hort. Paris*, 1862, p. 50. *Flore des Serres*, t. 1825.

I see no reason whatever for regarding this splendid plant as other than a slight variety of the original *O. tigrinum ;* whose variations, including var. *unguiculatum*, Lindl. (*O. ionosmum*, Hort.) are very far within the limits reached by other species of the genus. It is a native of the Irapæan mountains, near Valladolid and Paracho, and of Mechoacan, both in Mexico ; and, according to Van Houtte (Flore des Serres) of Guatemala. The magnificent variety here figured flowered in the splendid collection of Lord Londesborough, in February, 1870, and bore twenty flowers on a branched raceme, supported by a peduncle two feet long. It is, without doubt, the finest *Oncidium* hitherto discovered.

Descr. *Pseudo-bulbs* crowded, two to three and a-half inches long, younger pear-shaped, older more orbicular, much

compressed, with obtuse edges, green, young concealed by large sheathing scales. *Leaves* a foot long by two feet and a-half broad when fully developed, dark green, narrowly linear, oblong, obtuse, somewhat contracted at the folded base. *Peduncle* two feet long, bearing a branched, many-flowered raceme half as long; bracts appressed; pedicels green, including the ovary, one inch to one and a half long. *Flowers* three inches long from the tips of the upper sepal to the base of the lip, two inches across the tip. *Sepals* and *petals* subequal, linear, acute, recurved or revolute, much waved, yellow, transversely blotched with rich chesnut brown. *Lip* all yellow, nearly flat, lateral lobes reduced to small half-orbicular auricles; mid-lobe transversely oblong, notched at the tip, subcordate at the base; disk of lip with two small, short, abrupt ridges at the very base, and a longer central one produced on to the mid-lobe. *Column* very short, with oblong spreading wings.—*J.D.H.*

Fig. 1, Column and base of lip, slightly *magnified.*

5.

1.

2.

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4. 3.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5879.

PAULLINIA thalictrifolia.

Native of Brazil.

Nat. Ord. Sapindaceæ.—Suborder, Sapindeæ.

Genus Paullinia, *Linn.*; (*Benth. and Hook. F., Gen. Plant.*, vol. i. p. 394).

Paullinia *thalictrifolia*; ramulis pubescenti-tomentosis, foliis pubescentibus subbipinnatis, pinnis 3-8 jugis, foliolis subsessilibus oblique obovatis superoribus integris v. 1-3 crenatis intermediis paucicrenatis v. lobulatis, infimis 3-lobis v. 3-sectis, rachibus ultimis compressis, stipulis deciduis, pedunculis axillaribus spiralibus foliis multo brevioribus simplicibus v. ramosis multifloris, pedunculis robustis, floribus parvis subsessilibus, calycis lobis obtusis petalis triplo brevioribus, filamentis basi carinatis, stylo alte 3-fido, capsula a basi 3-alata, alis sursum dilatatis apice divaricatis.

Paullinia thalictrifolia, *A. Juss.* in *Ann. Mus.*, vol. iv. p. 347, t. 66, f. 1. *DC. Prod.*, vol. i. p. 605.

P. bipinnata, *Poiret, Encycl.*, vol. iv. p. 37.

P. fluminensis, *Velloz. Flor. Flum.*, vol. iv. t. 37.

It is seldom that a woody Tropical climber of the natural family to which the subject of the present Plate belongs, affords a subject of much horticultural interest: and this owes its exceptional character to the beautifully feathery foliage, which, accompanied by its scandent habit, gives it when in a young state the habit and appearance of a climbing *Davillia*, or allied Fern. In this condition it flowers very sparingly; and herbarium specimens, gathered from full-grown plants in Brazil, have a coarse woody habit and much larger leaflets. The plant is a native of the Rio de Janeiro province of Brazil, whence it was imported by Messrs. Veitch of the Royal Exotic Nurseries, King's-road, Chelsea, with whom it flowered in October, 1870.

Descr. A woody climber, probably many feet high. *Stem* terete, slender, and branches densely clothed with a velvety

tomentum. *Leaves* four to ten inches long, deltoid-ovate in outline, 3-ternately-pinnate, pubescent, main rachis angular, partial flattened, or obscurely winged; pinnæ in six to eight pairs, narrow-ovate, upper linear; pinnules four to eight pairs, one-third to two-thirds of an inch long, rather coriaceous terminal obovate-cuneate, usually 3-crenate, lateral obliquely obovate, contracted at the base or obscurely petiolate, upper 2- to 3-crenate or lobulate, lower 2- to 3-lobed, or 3-sect. *Racemes* short, axillary, many-flowered, densely pubescent, simple or branched; rachis short. *Flowers* in small clusters, one-eighth of an inch in diameter, very shortly pedicelled. *Sepals* small, oblong, obtuse, two-thirds shorter than the petals, green. *Petals* obliquely obovate, very pale pink, concave; inner with a large irregularly shaped appendage, which is ciliate on one side. *Stamens* erect; filaments connate at the base; anthers small. *Ovary* 3-gonous, pubescent; style 3-partite, stigmas simple.—*J. D. H.*

Fig. 1, Flower; 2, the same with two petals removed; 3 and 4, inner petals; 5, stamens and pistil, 6 pistil:—*all magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

TAB. 5880.

ARISTOLOCHIA DUCHARTREI.

Native of the Upper Amazons.

Nat. Ord. ARISTOLOCHIACEÆ.—Tribe ARISTOLOCHIEÆ.

Genus ARISTOLOCHIA, *Linn.*; (*Duchartre*, in *DC. Prod.*, vol. xiv. p. 432).

ARISTOLOCHIA (Gymnolobus) *Duchartrei*; suffruticosa, scandens, cortice suberoso, foliis coriaceis longe petiolatis late reniformi-cordatis abrupte acuminatis 5-7-nerviis basi leviter cordatis v. truncatis, superne glabris glaucescentibus, subtus pallidis nervis pubescentibus, floribus numerosis in racemos axillares breves dispositis, pedicellis curvis, perianthio majusculo, tubo subcylindrico basi intruso abrupte in limbum refractum oblique campanulatum concavum attenuato, limbo expanso ambitu ovato cordato extus pallido costato et reticulato inter nervos lacunoso, intus flavo purpureo-maculato, maculis substellatis, ore pallido, stylo lobis 6 ovato-lanceolatis, .

ARISTOLOCHIA Duchartrei; *André* in *Le mouvement horticole de* 1867, p. 61. *Revue Hortic.* 1867, p. 383. *Ill. Hortic.* 1868, p. 97, and 1870, p. 1. *Masters*, in *Gard. Chron.* 1868, p. 516, *cum ic. xylog.*

A curious and showy species of *Aristolochia*, discovered by M. Wallis on the Upper Amazons, whilst collecting for Mr. Linden of Brussels in 1866, and named by M. André in honour of M. Duchartre, the eminent Paris botanist, and author of the "Monograph of Aristolochia" in De Candolle's "Prodromus." As a species it is allied to the *A. leuconeura* (Tab. Nost. 5420), but has much handsomer flowers, which are abundantly produced during a good part of the year.

The specimen here figured flowered in the Royal Gardens in January, 1868, and was received from Mr. Linden.

DESCR. *Stem* climbing, as thick as the little finger, brown, grooved, corky. *Branches* annual, slender, glaucous. *Leaves* long petioled, four to five inches in diameter, coriaceous, shining, broadly reniform-cordate, suddenly acuminate, dark-green and glaucous above, pale below, palmately five to seven-

nerved ; nerves beneath pubescent, reticulated. *Flowers* from the old wood, in short almost sessile racemes ; rachis or peduncle one to two inches long ; pedicel curved, one inch long ; ovary as long, tomentose. *Perianth* with a cylindric pale tube, half to one inch long by half to two-thirds of an inch in diameter, which is truncated and introrse at the base, beyond this the perianth is suddenly contracted, refracted on itself, and expands into a broadly oblique funnel-shaped limb, with an ovate-cordate, concave mouth, two and a half to three inches in diameter ; basal part or tube whitish, with pale brown streaks ; limbs strongly ribbed and veined, externally, pitted between the veins, pale brownish-red, clouded with darker blotches ; inner surface cream-coloured, with large stellate or irregularly mottled purple blotches, throat cream-coloured. *Column* short, with six anthers, and as many ovate-lanceolate erect stigmatic lobes.—*J. D. H.*

Fig. 1, Column, *magnified*.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5881.

HÆMANTHUS TENUIFLORUS, VAR. COCCINEUS.

A Native of Abyssinia.

Nat. Ord. Amaryllideæ.—Tribe Amarylleæ.

Genus Hæmanthus, *Linn.*; (*Endl. Gen. Pl.*, vol. i. p. 177).

Hæmanthus *tenuiflorus*; bulbo ovoideo, foliis se otinis cylindraceo-vaginantibis ellipticis in petiolum vix angustatis, vagina exteriore basi purpureo-maculatis, inflorescentia præcoci, scapo stricto viridi compresso, bracteis lineari-oblongis inæqualibus patentibus pallidis. floribus numerosissimis, pedicellis pollicaribus, corollæ tubo $\frac{1}{4}$ poll. longo, laciniis anguste-linearibus $\frac{2}{3}$ poll. longis erecto-patentibus filamentisque coccineis, antheris aureis.

Hæmanthus tenuiflorus; *Herbert*, in *Bot. Mag.* t. 3870. *Kunth*, *Enum.* vol. v. p. 587.

Var. *coccineus*; floribus coccineis.

A native of Abyssinia, where it was collected by the Honble. R. Leslie Melville, who accompanied the Abyssinian Expedition, in 1868, and who presented the plant to the Royal Gardens. It appears to be specifically identical with the *H. tenuiflorus* of Herbert, of which a pale-flowered variety (var. *Mozambicensis*) is figured in the 67th volume of this work, from a specimen flowered by Mr. Herbert himself, at Spofforth. Coming as it does from Abyssinia, I was at first disposed to refer it to the unknown *H. abyssynicus*, Herb. (Amaryll. p. 232), but that species is described as having many purple reflexed spathes, and very small flowers. In his remarkable work on the Amaryllidaceæ (which abounds in curious and very often highly philosophical discussions), Mr. Herbert states in his remarks at the end of Hæmanthus (p. 239), that the species of his first section "flower with the leaves in vigour, instead of before their appearance," and he includes in this section his *H. delagoensis* (Amaryll. p. 233), a species which he subsequently (Tab. Nost. 3870), refers to

tenuiflorus, which again he himself figures as in full flower with the leaves not yet developed.

Hæmanthus tenuiflorus appears to have a very wide range in latitude; we possess specimens from various localities, from Delagoa Bay to the White Nile; it differs from the W. African *H. multiflorus* (Tab. Nost. 961 and 1995), in the less dense head of flowers; and in their appearing before the leaves.

Descr. *Bulb* ovoid, coated with brown scales. *Leaves* three to five, autumnal, four to five inches long, elliptic, with long tubular sheathing bases, which together form an erect cylindric stem two to four inches high, and as thick as the little finger, green, spotted purple at the base. *Scape* vernal, erect, green, compressed, four inches long, half an inch in diameter. *Spathes* one inch to one and a half long, linear-oblong, spreading, subacute, pale-green and purplish. *Flowers* very numerous but not very dense, in a depressed subspherical head; peduncles one to one and a half inch long, pale. *Ovary* small, green. *Perianth* scarlet; tube one-quarter of an inch long; lobes two-thirds of an inch long, very slender, spreading, with upturned hooded points. *Filaments* scarlet; as long as the perianth-segment; anthers small, yellow. *Style* scarlet.—*J. D. H.*

Fig. 1, Flower; 2, pistil; 3, transverse section of ovary:—*all magnified.*

ASYSTASIA VIOLACEA.

Native of the Peninsula of India.

Nat. Ord. Acanthaceæ.—Tribe Asystasieæ.

Genus Asystasia, *Blume;* (*Endl. Gen. Pl.*, vol. i. p. 701.)

Asystasia *violacea;* caule glaberrimo ascendente obtuse 4-gono, foliis breviter petiolatis ovatis acutis v. acuminatis, superioribus subsessilibus basi rotundatis, utrinque hirtellis glabratisve, racemis terminalibus solitariis v. geminis strictis erectis remotifloris, bracteis 3 minutis, pedicellis brevissimis, calycis laciniis lineari-lanceolatis subacutis hirtellis tubo corollæ multo brevioribus, corollæ violaceæ pollicaris extus glandulosæ tubo medio constricto, fauce ampliato, limbi sub 2-labiati laciniis ovatis obtusis patentibus albo-limbatis, capsula glandulosa clavata longe unguiculata.

Asystasia violacea, *Dalzell*, in *Hook. Kew Journ. Bot.*, vol. ii. p. 139 (1850).

A native of the Concan Provinces of the Western Peninsula of India. I refer it with some hesitation to the *Asystasia violacea* of Dalzell (a plant omitted in the late Dr. T. Anderson's valuable monograph of Indian *Acanthaceæ* published in the Linnæan Society's Journal, vol. ix. p. 139), the calyx appearing smaller than in authentic dried specimens of *A. violacea* received from Mr. Dalzell himself; the lower lip of the corolla being not so prominent as he describes it, and no notice being taken in his description of the broad white margins of the corolla-lobes. From the common Ceylon and Peninsular Indian *A. chelonioides*, of which it may be a form, it differs in the simple raceme, short petioles, and subsessile flowers. *A. Coromandeliana*, Nees, a very common Indian plant, has much larger flowers, and also long-petioled leaves. Our specimens were raised from seeds sent by Dr. Anderson, of the Calcutta Botanic Gardens, under the name of *A. chelonioides*, of which, as before observed, it may be a form.

Descr. *Stem* slender, one to two feet high, decumbent at

the base, sparingly branched, glabrous; branches obtusely 4-angled. *Leaves* one to three inches long, shortly petioled, ovate, broadly-ovate, or ovate-lanceolate, acute or acuminate, with an obtuse tip, deep green, minutely hairy on both surfaces, upper usually very rounded at the base. *Racemes* solitary or two together, rarely three, from the tips of the branches, two to four inches long, strict, erect. Flowers secund; pedicels very short, 3-bracteate at the base; bracts minute, subulate. *Calyx* small, one-quarter of an inch long, somewhat pubescent; segments subulate-lanceolate, suberect. *Corolla* three-quarters to one inch long; tube half an inch, rather slender, inflated at the base within the calyx, whitish; throat as long as the tube, subcampanulate, violet-purple, striped with white; segments five, nearly equal, ovate, obtuse, violet-purple, with a broad white limb, the lower segments rather larger and deeper coloured. *Anthers* small, included. *Ovary* glandular; style slender, stigma minutely bifid.—*J. D. H.*

Fig. 1, Corolla laid open; 2, stamens; 3, calyx and pistil; 4, ovary and disk; 5, vertical section of do.—*all magnified.*

W. Fitch, del. et lith

Tab. 5883.

AMARYLLIS Rayneri.

Native of Brazil.

Nat. Ord. Amaryllidaceæ.—Tribe Amaryllideæ.

Genus Amaryllis, *Linn.*; (*Endl. Gen. Pl.*, vol. i. p. 176).

Amaryllis (Hippeastrum) *Rayneri*; bulbo elongato-ovoideo v. lagenæformi, foliis distichis falcato-arcuatis 1½-2 poll. latis ensiformibus apice attenuato obtuso firmis creberrime striatis viridibus fulvo marginatis, scapo valde compresso ancipiti viridi fistuloso 1-1½-pedali diametro pollicis, floribus 2-3, bracteis viridibus membranaceis, 3 exterioribus lanceolatis, 3 interioribus linearibus, pedicellis 1½-pollicaribus, floribus 5-6-poll. longis, ovario obovoideo, perianthii foliolis oblanceolatis acutis supra medium recurvis undulatis pallide purpureis medio albis, 3 exterioribus sub apice cucullatis, staminibus declinatis incurvis, antheris flavis, stigmate 3-lobo.

A very stately plant, remarkable for the broad and sickle-shaped, buff-edged leaves, and large size of the pale, purple flowers; its bulbs were sent by Mr. Williams of Bahia, a gentleman who has introduced many fine plants from Brazil, to Dr. Rayner of Uxbridge, who flowered it in November, 1870, and whose merits as an ardent and successful cultivator, I venture to commemorate by giving his name to this superb plant.

Of the described species of the *Hippeastrum* section of *Amaryllis*, I find none that agree with this in most of its characters, though in the form of the falcate leaves it resembles *A. calyptrata*, Ker, (Bot. Reg., vol. ii. t. 164), also a native of Brazil, from whence indeed the majority of the genus hitherto introduced into European gardens have been derived.

I have followed Endlicher, and the majority of botanists, in treating *Hippeastrum* as a section of *Amaryllis*, keeping it sectionally distinct on account of the hollow scape: how far this character coincides with that drawn from the seeds,

and relied upon by Herbert and others, is not yet satisfactorily ascertained. *Amaryllis*, according to these latter authors, should have fleshy seeds, and *Hippeastrum* angular seeds, with a black seed-coat, characters which have not been sufficiently investigated, because of the rarity of fruiting specimens of either genus (or section) in herbaria or gardens.

Descr. *Bulb* ten inches long, narrow-ovoid or flask-shaped, covered with pale membranous scales. *Leaves* distichous, sixteen to twenty inches long, remarkably sickle-shaped, all curling in the same direction, two to two and a half inches diameter, narrowed to an obtuse point, coriaceous, densely striate, flat except at the concave base, deep green, with a narrow buff margin. *Scape* one to one and a half feet high, short, erect, much compressed, 2-edged, green, hollow. *Spathes* about six, two to three inches long, membranous; outer lanceolate, convolute, subacute; inner linear, very narrow. *Flowers* two to three, horizontal; pedicels one to one and a half inch long. *Ovary* short, obovoid. *Perianth* five to six inches long, four to five inches diameter across the tips of the segments, funnel-shaped; segments pale purple, with whitish tips and median band, oblanceolate, striated externally, acute, margins waved, upper one-third recurved, the outer with thickened hooded tips. *Filaments* pale, approximate, declinate, with arched upcurved tips; anthers oblong, yellow. *Style* slender, tip upcurved; stigma 3-lobed.—*J. D. H.*

Fig. 1, Diminished view of the whole plant; 2, stigma:—*both magnified.*

2.

W. Fitch, del. et lith

Vincent Brooks, Day & Son, Imp

Tab. 5884.

GLADIOLUS DRACOCEPHALUS.

Native of the Natal Colony.

Nat. Ord. Irideæ.—Tribe Gladioleæ.

Gladiolus (Hebea) *dracocephalus;* scapo 2-3-pedali, foliis elongato-ensiformibus $\frac{3}{4}$-$1\frac{1}{2}$ poll. latis acutis costa media valida, spica laxiflora, floribus secundis, bracteis tubo perianthii longioribus anguste oblongo-lanceolatis acuminatis viridibus, perianthio horizontali v. subdecurvo sub 2-labiato, segmentis 3 superioribus majoribus obovato-ellipticis sordide flavis purpureo creberrime striolatis, 2 lateralibus erectis apicibus recurvis, postico fornicato decurvo, segmentis 3 inferioribus multo minoribus deflexis revolutis oblongo-obovatis obtusis viridibus punctis purpureis conspersis, stigmatibus brevibus linearibus.

At Tab. 5873 was figured a new species of *Gladiolus*, communicated by Mr. Wilson Sanders, remarkable for the vivid colouring of its flowers; and we have now from the same gentleman, another, and also a new species, no less remarkable for the contrast it affords in the lurid hues of its flowers, which are wholly unlike those of any of its congeners known to me.

It was discovered at the foot of the Drachenberg Mountains, in the West of the Natal Colony, by Mr. Cooper, Mr. Wilson Saunders' successful S. African collector, and was flowered in the Hillfield Gardens, Reigate, in August of last year. Mr. J. G. Baker, who fortunately for science and horticulture has taken up the study of the long neglected petaloid monocotyledons, informs me that it is certainly not described in Klat's monograph of *Gladiolus* (Linnæa, v. 3), but belongs to that author's section *Hebea*, and further remarks, that with the very broad leaves of *G. Papilio* (Tab. Nost. 5565), it has the perianth of *G. viperatus* (Tab. Nost. 688), which also belongs to the two-lipped division, but differs widely in habit and the form of the perianth-segments. The publication of

two new *Gladioli*, within so short a period, and from localities inhabited by Europeans, shows how much there is still to be done in the way of introducing new plants from well-known and very accessible quarters of the globe.

Descr. *Roots* not seen. *Leaves* numerous, six to twelve inches long, by one to one and a half broad, pale green, ensiform, acute, uni-costate. *Scape* or stem sixteen to eighteen inches high, stout, terete. *Spike* erect, 5- to 7-flowered; flowers secund. *Bracts* large, two to three inches long, lanceolate, convolute, acuminate, erect, green, much exceeding the perianth-tube, half of which they enclose. *Perianth* about two inches long, and as broad across the tips of the segments, 2-lipped, three upper segments yellowish, closely striated with dull red purple, elliptic-obovate, shortly clawed, two outer wing-like, spreading, with acute recurved tips; posterior one arched and hooded, projecting horizontally between the lateral; two lower segments much smaller, deflexed, recurved or revolute, linear-oblong, bright green, spotted with purple. *Stigmas* three, linear, revolute.—*J. D. H.*

Fig. 1, Tip of filament and anther; 2, tip of style and stigma:—*both magnified.*

2.

1.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5885.

CIRSIUM Grahami.

Native of New Mexico.

Nat. Ord. Compositæ.—Suborder Cynarocephaleæ.

Genus Cirsium, *Tourn.*; (*Endl. Gen. Pl.*, vol. i. p. 477).

Cirsium *Grahami*; caule 3-5-pedali apice parce ramoso, ramis monocephalis, foliis subtus cano-lanuginosis supra leviter arachnoideis mox nudis lanceolatis sinuatis v. subpinnatifidis spinuloso-ciliatis lobis dentibusve breviter spinosis, caulinis semi-amplexicaulibus haud decurrentibus, involucro ovoideo-globoso basi nudo v. bracteolis paucis parvis instructo, squamis coriaceis appressis glabratis lanceolatis spinula brevi terminatis, corollis intense incarnatis.

Cirsium Grahami, *A. Gray* in *Plant. Wright, Nov. Mex.*, p. 102.

The brilliant colouring of the flower-head of this thistle, together with its snow-white stems branches and underface of the leaves, render it a very striking border plant in the garden. The seeds were sent to the Royal Gardens, Kew, from New Mexico, by Dr. Walker (late surgeon and naturalist of the Arctic Searching Expedition, under Captain Sir F. L. McClintock, R.N., which found the Franklin remains), and who is now travelling in N.W. America. It was discovered by the indefatigable botanical collector, Mr. Charles Wright, in 1851, when accompanying Col. Graham on the U.S. Boundary Commission, in low grounds of valleys between the Soniota and San Pedro, Sonora.

As a species it comes very near to *C. undulatum*, Spreng., (*C. Douglasii*, DC.), and *C. Hookerianum*, Nutt., both natives of N.W. America, if indeed all these be not forms of one wide-spread and not very variable plant: it differs mainly in the more glabrous involucre, with much shorter, less recurved spinulose tips to the bracts.

February 1st, 1871.

Descr. A rather slender, sparingly branched herb, probably biennial. *Stem* three to five feet high, erect or decumbent at the base, angular, densely clothed with white cottony wool, as are the underside of the leaves and the peduncles of the flower-heads. *Leaves* lanceolate, six to fifteen inches long, acute, sinuate lobed or pinnatifid, lobes or segments very unequal, and unequally pungently toothed, upper surface at first cobwebby, at length glabrate, rather dull green; upper leaves sessile, oblong or lanceolate, less toothed and lobed. *Heads* few, terminating the branches, about two inches long, on stout, erect, or inclined peduncles. *Involucre* broadly ovoid, three-quarters of an inch to one inch diameter, naked at the base, or with a few small, leaf-like bracts; scales ovate, acuminate, with short, suberect, pungent tips, densely imbricate, coriaceous, green, with a white streak down the back. *Florets* much exceeding the involucre, very numerous, vivid blood-red, outer spreading and incurved. *Segments* of the corolla very narrow-linear, suberect. *Style* blood-red, much exserted, slender; tip narrow, 2-fid. *Achene* small, almost glabrous. *Pappus* hairs numerous, very unequal, and rather rigid, shining, sparingly feathery.—*J. D. H.*

Fig. 1, Floret removed from the involucre; 2, base of the pappus:—*both magnified.*

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2

3.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5886.

POGOGYNE Douglasii.

Native of California.

Nat. Ord. Labiatæ.—Tribe Melissinæ.

Genus Pogogyne, *Benth.*; (*DC. Prod.*, vol. xii. p. 243).

Pogogyne *Douglasii*; annua, caule erecto glabro v. puberulo superne subfastigiatim ramoso, foliis petiolatis oblongis obovatis v. spathulatoobovatis obtusis integerrimis v. inæqualiter sinuato-dentatis utrinque viridibus, floralibus consimilibus, spicis oblongis, bracteis linearibus acutis flores æquantibus v. longe superantibus pilis albis rigidis longe ciliatis, staminibus corolla brevioribus, dentibus calycinis inferioribus tubo longioribus, corolla purpurea albo-maculata.

Pogogyne Douglasii, *Benth. Lab.* p. 414, et in *DC. Prod.*, vol. xii. p. 243.

The genus *Pogogyne* was established by Bentham for three Northern Californian plants (apparently varieties of one), allied to Calamint, and discovered by the late David Douglas. All are very aromatic, and more recommendable for this quality than for their beauty; for except in the sparkling colour of their dark-violet corollas spotted with white, they have little to recommend them to the horticulturist.

The specimen here figured was raised in the Royal Gardens, from seeds sent by our excellent correspondent Mr. Bolander, of the State Survey of California, a very active botanist and collector, to whom the Royal Gardens are indebted for many interesting plants: it is an annual, and quite hardy.

Descr. A slender, strict, upright, aromatic annual, simple or fastigiately branched above, six to eighteen inches high. *Stems* tetra-gonous, nearly glabrous, shining. *Leaves* three-quarters to one and a half inches long, including the slender petiole, into which they are gradually narrowed, oblong or narrow-obovate or spathulate, obtuse, entire or unequally sinuate-toothed,

glabrous or the upper ciliate towards the base; floral similar, but more ciliate. *Spike* one to three inches long, stout, cylindric, dense-flowered. *Bracts* linear, acute, shorter or longer than the flowers, ciliate with long rigid white bristles; bracteoles linear-lanceolate. *Flowers* half an inch long. *Calyx* cleft to the middle or below it into five subulate ciliate teeth, of which the two lower are much the longest, and as long as, or much exceeding the tube. *Corolla-tube* twice as long as the calyx, pale; limb deep purple; upper lip short, sub-erect, arched, obtuse; lower lip broad, 3-lobed, spotted with white; lobes obtuse. *Anthers* purple. *Stigmas* subulate.—*J. D. H.*

Fig. 1, Front, and 2, side view of flower; 3, longitudinal section of corolla, with ovary and style:—*all magnified.*

W. Fitch del. et lith.

Vincent Brooks, Day & Son Imp.

Tab. 5887.

CYRTANTHERA CHRYSOSTEPHANA.

Native of Mexico.

Nat. Ord. Acanthaceæ.—Tribe Aphelandreæ.

Genus Cyrtanthera, *N. ab E.*—(*DC. Prod.*, vol. xi. p 328).

Cyrtanthera *chrysostephana;* caule obtuse tetragono, foliis petiolatis ovatis v. ovato-lanceolatis acuminatis basi acutis, supra puberulis subtus glaberrimis, costa superne nervisque subtus rubris, inflorescentia e cymis paucis terminalibus breviter pedunculatis multifloris in corymbum brevem coroniformem subverticillatis, floribus 2-pollicaribus breviter pedicellatis aureis, bracteis calyce brevioribus lanceolatis acuminatis, bracteolis linearibus ciliatis, calycis infra medium 5-fidi laciniis subulatis laxe ciliatis, corolla glaberrima leviter incurva tubo angusto angulato, labio superiore oblongo lanceolato concavo subacuto, inferiore deflexo obtuse 3-lobo, stigmate minuto.

A new and very distinct species of the Tropical American genus *Cyrtanthera*, less showy indeed than *C. catalpæfolia*, Nees (Tab. Nost. 4444), or *C. aurantiaca*, Nees (Tab. Nost. 4468), but of a more elegant habit than either of these, and conspicuous for the vivid red colour of the midrib and nerves of the leaf beneath. The flowers, instead of being disposed in a dense thyrsus, or in axillary cymes, as in most species of the genus, are collected into a crown-like corymb at the tips of the branches, and are of a bright golden yellow.

C. chrysostephana is a native of Mexico, from whence it was imported by Mr. Bull of Chelsea, and it flowered in his stoves in December of last year.

This species is allied to the Mexican *C. aurea*, Nees, but differs in the leaves not being decurrent on the petiole, in the inflorescence, and in the short bracts.

Descr. *Stem* herbaceous, green, obtusely 4-gonous, glabrous or minutely puberulous on the upper part. *Leaves* five to six inches long, on petioles half an inch to one inch long,

ovate, or ovate-lanceolate, acuminate, acute at the base, upper surface covered with minute hairs, dark green, with a red midrib, under surface glabrous, pale-green, with red midrib and veins. *Flowers* erect, golden-yellow, two inches long, crowded in short, terminal, very shortly peduncled cymes, so that the inflorescence resembles a golden crown. *Pedicels* very short. *Bracts* dark-green, linear-lanceolate, rather broader at the base, acuminate, shorter than the calyx, sparingly ciliate; bracteoles narrow, obtuse or acute. *Calyx* dark-green, one third of an inch long, cleft to below the middle into five subulate, sparingly ciliate segments. *Corolla* narrow, perfectly glabrous, slightly incurved, of nearly equal diameter and uniform colour throughout; tube angular; limb 2-lipped; upper lip narrow, oblong-lanceolate, laterally compressed, vaulted, subacute; lower lip reflexed, oblong, obtusely 3-lobed. *Anther-cells* nearly straight, glabrous. *Stigma* minute.—*J. D. H.*

Fig. 1, Calyx, bracteoles, and style; 2, ovary and disk:—*both magnified.*

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Tab. 5888.

BELOPERONE ciliata.

Native of Peru and New Grenada.

Nat. Ord. Acanthaceæ.—Tribe Aphelandreæ.

Genus Beloperone, *Nees*; (*DC. Prod.*, vol. xi. p. 413).

Beloperone *ciliata*; herbacea, annua, caule obscure 4-gono puberulo, nodis tumidis, foliis petiolatis ovato-lanceolatis acutis glabris raphidibus farctis, floribus, in fasciculos axillares et terminales sessiles v. breviter pedunculatos aggregatis violaceis, bracteis aciculari-subulatis ciliatis calycem superantibus, calycis 5-partiti segmentis lanceolato-subulatis ciliatis corollæ tubo cylindrico $\frac{3}{4}$ poll. longo dimidio brevioribus, corollæ labio superiore parvo breviter oblongo recurvo 2-lobo, inferiore dilatato late 3-lobo, lobis ovato-rotundatis obtusis, palate albo, antheræ loculis breviter linearibus ecalcaratis basi divergentibus, connectivo latiusculo, stigmate minute 2-lobo.

Jacobinia ciliata; *Seem. Bot. Voy. Herald*, p. 178; *Masters* in *Gard. Chron.*, 1870, p. 1567; and *Nees* in *DC. Prod.*, vol. xi. p. 331?

A very pretty winter-flowering stove-plant, the nomenclature of which is involved in doubt. It was examined by Dr. Martius in November last, and proved identical with a plant in the Hookerian Herbarium, collected by Dr. Seemann in Panama, and referred by him to *Jacobinia ciliata*, Nees, and was hence published under that name in the *Gardener's Chronicle*. I am unfortunately unable to ascertain whether Seemann's Panama plant is really Nees' *J. ciliata*, which comes from a widely different country, St. Jago de Chili; the original specimen of Tweedie, upon which Nees founded the species, having been mislaid since the comparison of the specimens in November. All I can say is, that this, which certainly is identical with the Panama plant, differs altogether both from Nees' generic character of *Jacobinia* and from his specific one of *J. ciliata*; and it is further to be observed, that when

Nees studied the *Acanthaceæ* of the Hookerian Herbarium, he had under his eye indifferent specimens of this plant, collected in Peru by Matthews, which he surely would have referred to his *Jacobinia ciliata* had he thought it the same.

I am indebted to Prof. Oliver for pointing out the close affinity of this plant with the *Beloperone violacea*, Planch. (Tab. Nost. 5244); *Adhatoda Carthaginensis*, Nees, in DC. Prod., v. ii. p. 403; and to Messrs. Veitch for the specimen here figured, which was raised from Venezuelan seeds. It is also a native of Panama and Peru.

Descr. *Stem* slender, branched, herbaceous, one to two feet high, geniculated at the base; branches obscurely 4-gonous, upper puberulous; nodes tumid. *Leaves* shortly petioled, two to three inches long, ovate or ovate-lanceolate, acute, membranous, green, glabrous, but so full of raphides, as, when dried, to appear to be covered with appressed hairs. *Flowers* axillary and terminal, sessile in shortly peduncled fascicles. *Bracts* and *bracteoles* narrow, subulate, rigid, erect, exceeding the calyx, ciliate. *Calyx* 5-partite, segments rigid, erect, subulate-lanceolate, ciliate, about half the length of the corolla tube. *Corolla* violet, with a white palate; tube three-quarters of an inch long, cylindric; upper lip very small, concave, recurved, 2-lobed; lower lip one to one and a quarter inch diameter, broader than long, deeply 3-lobed, lobes orbicular-ovate, obtuse, flat. *Stamens* not exserted, filaments short; anther-cells linear-oblong, diverging below, not spurred, connective rather broad. *Disk* annular. *Ovary* glabrous; stigma minute, 2-lobed. *Capsule* compressed; upper half ovoid, acute, lower much contracted.—*J. D. H.*

Fig. 1, Bracts, bud, and style; 2, calyx and style; 3, stamens; 4, disk and ovary; 5, vertical section of ditto:—*all magnified.*

W Fitch, del et lith

Vincent Brooks, Day & Son, Imp.

Tab. 5889.

SAXIFRAGA (AIZOONIA) LONGIFOLIA.

Native of the Pyrenees.

Nat. Ord. Saxifragaceæ.—Tribe Saxifrageæ.

Genus Saxifraga, *Linn.*; (*Benth. and Hook. f. Gen. Pl.*, vol. ii. p. 635).

Saxifraga (Aizoonia) *longifolia*; scapo foliis junioribus et inflorescentia glanduloso-pubescentibus, foliis 1-3 pollicaribus densissime rosulatis patentibus rectiusculis anguste lineari-oblongis spathulatisve obtusiusculis cartilagineo-marginatis, scapo valido recto à basi florifero, inflorescentia confertiflora pyramidato-cylindrica, ramis perplurimis patulis basi bractea foliacea instructis, pedicellis basi bracteolatis, calycis lobis ovato-rotundatis tubum hemisphericum subæquantibus, petalis orbiculatis patentibus albis brunneo-punctatis, seminibus ovato-triquetris **tenuissime rugulosis.**

Saxifraga longifolia, *La Peyr. Flor. Pyr.*, p. 26, t. xi.; *Sternberg Revis. Sax.*, p. 1, t. i.; *DC. Prod.*, vol. iv. p. 19.

Saxifraga lingulata, var. α; *Don in Trans. Linn. Soc.*, vol. xiii. p. 391.

Chondrosea longifolia, *Haw. Enum. Saxif.*, p. 11.

A very striking species, commonly cultivated on the Continent, but very rarely in England, where, however, it succeeds admirably in the open air, or in a partially shaded rock-work, forming brilliant green rosettes of leaves, four to six inches in diameter, and sending up in midsummer a truly glorious pyramidal nodding thyrsus, a foot high, of white flowers, that lasts for several weeks. It is a native of the higher valleys of the Pyrenees, at the Baths of Luchon, and elsewhere, at elevations of 2000 to 7000 feet above the sea.

The specimens figured flowered in the Royal Gardens in July last.

Descr. Plant forming convex bright-green rosettes, three to seven inches in diameter; young leaves, scape, and inflorescence covered with a viscid glandular pubescence. *Leaves*

most densely rosulate, spreading, the outer rather recurved, one to three inches long, one-quarter to one-third of an inch broad, narrow linear-spathulate, very coriaceous, obtuse, with white cartilaginous margins, which are obscurely crenulate, especially when dry. *Scape* one to one and a half feet high, stout, loaded throughout with flowers, the inflorescence forming an obtusely conical, subcylindric, nodding mass, five to seven inches in diameter; primary branches horizontal, two to four inches long, floriferous towards their tips; bracts at their bases foliaceous, one-half to one inch long, linear, obtuse, glandular, not margined. *Pedicels* very variable in length, with small bracteoles at the base. *Flowers* three-quarters of an inch in diameter. *Calyx-lobes* rounded-ovate, about as long as the hemispheric tube. *Petals* orbicular, white, with a few minute red-brown dots on the disk. *Filaments* subulate; anthers small, yellow. *Styles* rather short, recurved.—*J. D. H.*

Fig. 1, *Reduced* view of whole plant: 2, leaf; 3, young leaf; 4, top of thyrsus, all of the *natural size*: 5, flower without the petals; and 6, a petal: —*both magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son Imp

Tab. 5890.

XIPHION junceum.

Native of Algiers.

Nat. Ord. Iridaceæ.—Tribe Irideæ.

Gen. Char.—*Perianthium* corollinum, regulare, tubo supra ovarium breve v. elongatum, limbi segmentis exterioribus obovato-spathulatis v. cuneatis imberbibus, interioribus oblanceolatis v. linearibus sæpe multo minoribus erectis v. patulis. *Stamina* 3, ad basin limbi segmentorum exteriorum inserta, perianthio breviora, filamentis filiformibus; antheræ lineares. *Ovarium* obtuse 3-gonum, 3-loculare; stylus perianthii tubo adnatus, stigmatibus 3 petaloideis; crista 2-loba, lobis lanceolatis dentatis. *Capsula* coriacea, apice loculicide 3-valvis, loculis polyspermis. *Semina* subglobosa. Herbæ *regionis* Mediterraneæ, Abyssiniæ, *et* Orientis *incolæ; radice bulboso.* Folia *rigida, graminea.* Flores *pauci, speciosi, solitarii* v. *pauci, cæruleo-violacei* v. *flavi.*

Xiphion *junceum;* bulbo ovoideo membranaceo-tunicato, caule $\frac{3}{4}$-$1\frac{1}{2}$ pedali 1-2-floro, foliis caulinis 4-6 angustissime lineari-ensiformibus $\frac{1}{12}$ unc. latis erectis inferne convolutis sursum filiformibus, spathæ valvis 2-3-pollicaribus leviter ventricosis lanceolatis acutis tubum perianthii æquantibus v. superantibus, perianthii aurei 3-poll. diametro breviter pedunculati tubo gracili pollicari, segmentis exterioribus longe unguiculatis late obovatis retusis, interioribus brevioribus erectis oblongo-spathulatis stigmatibus æquilongis et paulo angustioribus, stigmatis lobis late semi-ovatis recurvis acutis.

Xiphion junceum, *Klatt in Linnæa*, vol. xxiv. p. 570. *Baker in Seem. Journ. Bot.* 1871, p. 41. *Parlatore Flor. Ital.*, vol. iii. p. 304.

Iris imberbis, *Poiret, Voy. Barb.*, vol. ii. p. 85.

Iris juncea, *Desf. Flor. Atlant.*, vol. i. p. 39, t. 4. *Boiss. Voy. in Esp.*, vol. ii. p. 703. *Munby, Fl. Alger.*, p. 6.

Iris mauritanica, *Clusius Cur. post.*, 24.

Diaphane stylosa, *Salisb. in Hort. Trans.*, vol. i. p. 305.

A native of dry hills near the town of Algiers, where it is a great ornament, and from whence bulbs were sent to the Royal Gardens by Madame Bodichon, which flowered in the

open air in July, 1869. It is also a native of Tangiers in Morocco, of Genoa and Sicily.

I have followed Mr. Baker, who has published a careful monograph of this genus, in separating *Xiphion* from *Iris*, chiefly on the ground of its totally different habit of growth; the true species of *Iris* having creeping root-stocks, those of *Xiphion* coated bulbs.

Descr. *Bulb* ovoid, one and a half to two inches long, covered with dark brown membranous coats that are produced into a torn tube surrounding the base of the stem. *Stem* erect, slender, rigid, flexuous, two-thirds to one and a half feet high. *Leaves* 5-6 on the stem, convolute at the base, terminating in a very slender rigid flat limb not one-twelfth inch broad. *Flowers* solitary or two together, three inches in diameter, golden yellow, with brownish veins. *Spathes* two, ventricose, as long as or exceeding the perianth-tube, lanceolate, acute. *Pedicel* short, lengthening in front. *Perianth-tube* slender, one and a half inch long; outer segments with an obovate retuse limb as long as the cuneate claw; inner segments erect, spathulate-lanceolate, rather shorter than the outer. *Stigmatic lobes* broadly half-ovate, acute, as broad as the inner perianth segments.—*J. D. H.*

Fig. 1, Ovary, and perianth tube; 2, stigmas:—*both magnified.*

W. Fitch, del. et lith.

Vincent Brooks Day & Son Imp

Tab. 5891.

MASSONIA (ASTEMMA) ODORATA.

Native of South Africa.

Nat. Ord. Liliacæ.—Tribe Hyacintheæ.

Genus Massonia, *Linn.*; (*Kunth. En. Plant.*, vol. iv. p. 29).

Massonia (Astemma) *odorata*; bulbo ovoideo pallido, caule brevi 2-foliato, foliis 3-5 pollicaribus erectis anguste lanceolatis concavis obtusiusculis, scapo brevi, corymbo subcapitato, floribus 2-6 brevissime pedicellatis 2-3 poll. longis albis odoris, bracteis obsoletis, perianthii tubo cylindrico fauce paulo ampliato, limbi lobis subæqualibus revolutis, corona 0, staminibus fauci insertis 2-seriatis, filamentis brevibus, antheris parvis purpureis, ovario angusto, stylo filiformi recto glaberrimo, stigmate punctiformi, ovulis numerosis adscendentibus.

A deliciously sweet-scented little Cape bulb, sent in 1866 to the Royal Gardens, by D. Arnot, Esq., a valued correspondent, who resides in the remote district of Colesberg, under the 32nd parallel of N. latitude, bordering the Griqua territory and Orange Free States, whence he has transmitted many rare and curious plants to Kew. It flowered in a cool house in October of last year.

The affinity of *Massonia* with *Hyacinthus* was pointed out so long ago as in 1802, by Gawler, in this magazine (under *M. ensifolia*, t. 554); and again in 1843, by Kunth, who observes that these genera differ in the insertion of the stamens, which in *Massonia* are higher up in the perianth-tube; to this may be added the numerous ovules of *Massonia*, the usually longer stamens, and the filaments being in almost all the species, though not in this, dilated at the base, or connected into a cup. Taking habit into consideration with other characters, it is possible that *Massonia* may ultimately

be broken up into two genera, corresponding to Endlicher's sectional divisions of *Massonia* proper and *Astemma*.

Descr. *Bulb* ovoid, three-quarters to one and a quarter inch long, covered with smooth pale scales; root fibres few, very slender. *Stem* half to one and a half inches high, formed of the short scape and leaf-sheaths. *Leaves* two, three to five inches long, suberect, very narrow lanceolate, one-third to two-thirds of an inch in diameter, rather obtuse, concave, deep green, somewhat thick. *Flowers* six to ten, in a subcorymbose head at the base of the leaves, white, very much scented. *Bracts* very small or obsolete. *Perianth* very shortly pedicelled; tube two-thirds of an inch long, cylindric, slightly dilated at the tip; limb with six subequal, revolute, obtuse segments, which are much shorter than the tube. *Stamens* inserted on the bases of the perianth-segments, filament short, subulate, not dilated nor connected at the base, the alternate longer; anthers small, purple. *Ovary* narrow, style erect, very slender, glabrous, stigma simple; ovules many in each cell, ascending.—*J. D. H.*

Fig. 1, Flower; 2, the same, with the perianth cut open; transverse section of ovary:—*all magnified.*

Vincent Brooks, Day & Son, Lith.

Tab. 5892.

TILLANDSIA (Pityrophyllum) ionantha.

Native of Brazil.

Nat. Ord. Bromeliaceæ.—Tribe Tillandsieæ,

Genus Tillandsia, *Linn.*; (*Endl. Gen. Plant*, p. 183).

Tillandsia (Pityrophyllum) *ionantha*; cæspitosa, subacaulis, surculosa, sparse albo-furfuracea, foliis $2\frac{1}{2}$-pollicaribus subulato-lanceolatis erecto-recurvis coriaceis antice infra apicem pungente acuminatis canaliculatis margine ciliolatis, summis bracteiformibus erectis roseo-kermesinis flores subæquantibus, floribus paucis sessilibus immersis, bracteis lanceolatis, sepalis lineari-lanceolata subæquantibus, petalis $1\frac{1}{2}$-pollicaribus, pallide violaceis ungue elongata lineari, lamina ovato-spathulata obtusa, filamentis filiformibus, antheris parvis exsertis oblongis, stylo exserto, stigmatibus 3 parvis cuneatis truncatis.

Tillandsia ionantha, *Planch. in Flore de Serres*, t. 1006.

Tillandsia erubescens, *Hort. Herrenhausen.*

Pityrophyllum erubescens, *Beer. die Fam. der Bromel.*, p. 79.

I refer this charming little plant, with some hesitation, to Planchon's *Tillandsia ionantha*, which I know only from the plate cited above, and the illustrious French botanist's description, which he is careful to say is drawn up from the figure prepared for the "Flore de Serres;" he not having had access to the specimens. The Belgian plate in question represents a larger plant than that here figured; five inches high, with rather more obtuse points to the leaves, deeper coloured violet flowers, and less exserted and smaller anthers; in all other respects the plants seem identical. Should they prove distinct however, I would suggest the name of *T. Scopus* for this, in allusion to its brush-like habit.

The plate here given was executed from a specimen

flowered by W. Wilson Saunders, F.R.S., at Reigate, which was procured by him from Mr. Marshall of Enfield; that figured in the "Flore de Serres" was in Mr. Van Houtte's collection at Ghent, and supposed to have come from Brazil.

Descr. A small tufted epiphyte, three to four inches high, forming squarrose masses, dull green, sparingly covered with silvery scurfy scales. *Leaves* numerous, closely imbricate, two to two and a half inches long, recurved, subulate-lanceolate, very coriaceous, concave above, with a terete, sub-pungent tip, margins ciliate, dark green, paler towards the base; upper leaves more erect, of a bright rose colour, rather exceeding the inflorescence, at length wholly green. *Flowers* sessile, crowded at the tips of the branches. *Bracts* lanceolate, acuminate, keeled, equalling the sepals, which are subulate-lanceolate, and half as long as the claw of the petals. *Petals* pale violet, convolute by their linear broad claws, into a slender tube, limb short, spathulate, concave, suberect, obtuse. *Stamens* exserted, filaments very slender; anthers small, yellow. *Ovary* oblong, 3-gonous; style very slender, stigmas three, small, cuneate, truncate.—*J. D. H.*

Fig. 1, Leaf; 2, flower; 3, petal and stamen; 4, pistil:—*all magnified.*

W. Fitch, del. et lith

Vincent Brooks, Day & Son, Imp.

Tab. 5893.

AGAVE ixtlioides.

Native of Mexico?

Nat. Ord. Amaryllideæ.—Tribe Agaveæ.

Genus Agave, *Linn.*; (*Endl. Gen. Plant.*, p. 181).

Agave *ixtlioides*; acaulis, foliis ad 30 $1\frac{1}{2}$–2 ped. longis medio $2\frac{1}{2}$–$3\frac{1}{2}$ poll. basi $\frac{1}{2}$ poll. latis lineari-lanceolatis in apicem pungentem brunneam sensim attenuatis immarginatis, infra medium planis supra medium concavis, junioribus intense glaucis, spinis parvis $\frac{1}{6}$-$\frac{1}{3}$ poll. distantibus falcatis adscendentibus brunneis, scapo 8-10-pedali, bracteis laxis erectis, paniculæ ramis 8-10 patentibus, floribus laxe corymbosis, perianthii tubo 1 poll. longo viridi segmentis lineari-oblongis obtusis flavo-viridibus subæqui longis, filamentis robustis, antheris magnis linearibus stramineis, stylo robusto staminibus multo breviore, stigmate subdilatato obtuso.

Agave ixtlioides, *Ch. Lemaire in Hamburg Garten und Blumenzeit.* vol. xxii. p. 214 (1866).

Agave fourcroydes; *Lemaire, l'Illust. Hortic.* vol. xi. p. 65 (1864) *non Jacobi.*

Of all cultivated plants none are more difficult to name accurately than the species of *Agave*, partly because of the imperfection of the published descriptions, and more from the impossibility of fixing their characters by words. The species before us is one that has long been in cultivation at Kew, but never flowered till January of the present year, when it threw up a scape twelve feet high. It agrees with the meagre character of the foliage (all that is described) of *A. ixtlioides*, itself a species of confused synonymy, and hardly distinguished by words from *A. fourcroydes* Jacobi; as which, according to Major-General Jacobi, it was first described by Lemaire. In other words, according to Jacobi, who is the great authority on this genus, this plant was first described by Lemaire as *A. fourcroydes* (L'Ill. Hortic., xi. 65), a name for which Jacobi

subsequently substituted that of *ixtlioides* (Hamburg Gartenflor., xxii. 214), with the sanction of Lemaire, under whose authority it stands, stating at the same time as his reason for this, that it differs from his *fourcroydes*. The true *fourcroydes* of Jacobi is described by himself (Hamburg Gartenflor., xxi. 167); and to it is referred as a synonym *A. ixtly*, C. Koch, not *A. ixtly* of Haworth; and in Jacobi's general enumeration of *Agaves* (Regel Gartenflor., xvii. 348) *A. ixtlioides* and *fourcroydes* stand next one another in one section, whilst *A. ixtly* is placed in another; but judging from the descriptions all three may well belong to one species.

Descr. *Stem* very short; constricted above the root. *Leaves* thirty to forty, forming a spreading rosette one to two feet across, dull green, very glaucous when young, eighteen to twenty inches long, two and a half to three and a half inches broad in the middle, thence narrowed upwards to a hard brown point, and downwards to a contracted base one and a half inches in diameter; upper surface of the upper half concave, of the lower half flat; spines small, brown, curved upwards. *Scape* ten to twelve feet high, slender, strict, sparingly covered with great bracts. *Panicle* two feet long, with about ten spreading branches a span long, each bearing towards its extremity a corymb of pale yellow-green sessile flowers; bracts at the base of the branch broadly ovate, acute, brown, one inch long; bracteoles much smaller and broader. *Flowers* two inches long. *Perianth-tube* cylindric-oblong, green, rather shorter than the oblong yellowish green perianth limb; segments linear-oblong, obtuse, very thick. *Filaments* very stout, pale, twice as long as the perianth segments; anthers one inch long, yellow. *Style* short, clubbed at the rounded stigmatic end.—*J. D. H.*

Fig. 1, Plant; 2, leaf, *reduced*; 3, portion of leaf; 4, portion of panicle: both of *natural size*.

W. Fitch, del et lith.

Vincent Brooks Day & Son, Imp

Tab. 5894.

COSTUS Malortieanus.

Native of Costa Rica.

Nat. Ord. Scitamineæ.—Tribe Costeæ.

Genus Costus, *Linn.*; (*Endl. Gen. Plant.*, p. 225).

Costus *Malorticanus*; tota hirsuta, caule robusto, foliis apicem versus caulis subconfertis amplis late obovatis breviter petiolatis coriaceis supra atro-viridi zonatis, subtus glaucescentibus, vaginis brevibus longe ciliatis, spica brevi ovoideo-globosa, bracteis ad 15 latissime ovatis latioribus quam longis obtusis arcte appressis subcarinatis viridibus, floribus magnis, perianthio exteriore brevi campanulato breviter inæqualiter obtuse 3-lobo, interioris tubo flavo pubescente, laciniis 3 exterioribus oblongis obtusis flavis concoloribus, labelli laciniis aureis rubro fasciatis, 3 anticis oblongo-cuneatis recurvis postico dilatato breviusculo 3-lobo lobis rotundatis crenato-dentatis, filamento magno lineari-oblongo medio dilatato apice obtuso recurvo, antheris parvis, stigmate parvo.

Costus Malortieanus, *Wendland in Hamburg Garten- und Blumenzeit.* **Vol. xix. p. 30 (1863).**

Costus elegans, *Hort.*

This was regarded by its discoverer, Wendland, as the finest of the many remarkable plants he obtained during his travels in Northern Costa Rica, in 1857; it was introduced by him into the Royal Gardens of Herrenhausen, in Hanover, whence a plant was sent to Kew, where it flowered in September, 1862. It is allied to *C. spicatus*, Roscoe, and *C. pictus*, Don (Bot. Reg. t. 1594); and still more to an unnamed Panama species collected by Fendler (n. 417), but differs abundantly from them all.

The genus *Costus* is a very large and little known one, it abounds in the humid districts of tropical America and Africa, but is rarer in Asia, where however the *C. speciosus* is a great ornament of the low forests of Bengal. It contains many species well worthy of cultivation.

Descr. Whole plant, except the flowers, hirsute, with soft

hairs. *Stem* one to three feet high, robust, terete, as thick as the finger, clothed above with foliage. *Leaves* very large, handsome, spreading, eight to twelve inches long, five to nine inches broad, obovate, acute, narrowed into a short petiole, deep green above, with darker bands between the ribs, glaucous below; sheaths short, green, with long cilia at the appressed mouth. *Spike* subsessile, two to three inches long, broadly ovoid, obscurely 5-angled, bright green. *Bracts* about fifteen, one inch long, closely imbricate and appressed, broader than long, subacute, keeled towards the tip. *Flowers* two and a half inches long, one and a half inches across the lip, golden-yellow, with close-set, orange-red, broken bands following the courses of the nerves on the expanded lobes of the lip. *Ovary* short, broadly obovoid, white. *Outer perianth* a small campanulate red cup, with three unequal rounded lobes. *Inner perianth* with a short, yellow, hairy tube, and three narrow oblong, obtuse, erect, concave leaflets surrounding the lip. *Lip* convolute, with three small, recurved, subspathulate lobes in front, and one large, 3-lobed, recurved, dorsal lobe. *Filament* erect, broadly linear-oblong, concave, dilated in the middle, obscurely 3-lobed at the recurved tip, fleshy; anther very small, oblong. *Stigma* transversely-oblong, ciliate.—*J. D. H.*

Fig. 1, Flower with three of the perianth segments removed; 2, ovary, outer perianth, filament, anther, style, and stigma:—*both magnified.*

W Fitch, del.

Vincent Brooks, Day & Son Imp

Tab. 5895.

GILIA liniflora.

Native of California.

Nat. Ord. Polemoniaceæ.

Genus Gilia, *Ruiz* and *Pavon*; (*A. Gray in Proc. Amer. Acad.*, June, 1870, p. 261).

Gilia (Dactylophyllum) *liniflora*; annua, gracilis, erecta, divaricatim ramosa, parce pilosa, foliis sessilibus 3-7-palmatisectis caulinis oppositis, segmentis anguste linearibus v. acicularibus, floribus sparsis v. subcymosis, pedicellis filiformibus, calyce campanulato dentibus triangulari-subulatis tubo brevioribus v. æquilongis, corolla alba fere rotata lobis obovatis calycem tersuperantibus, filamentis summo tubo insertis gracilibus basi pubescentibus.

Gilia liniflora, *Benth. in Bot. Reg., sub. t.* 1622; et in *DC. Prod.*, vol. ix. p. 315. *A. Gray l. c.*, p. 263.

One of the many interesting discoveries of the late David Douglas, in 1826; introduced into cultivation by Mr. W. Thompson, of Ipswich, who sent flowering specimens to Kew, in July, 1869, from which the accompanying figure was made. It is a perfectly hardy annual, and very free flowerer, in habit resembling a white-flowered flax, with the leaves of a *Spergula*.

The genus *Gilia*, as recently reformed by Asa Gray in the Proceedings of the American Academy of Science, contains sixty-five temperate N. American species, and there are besides a few in subtropical S. America; one of these, the Chilian *G. pusilla*, being very closely allied to, if not identical with the N. American *G. pharnaceoides*, which Gray has reduced to a variety of *liniflora*. As thus reconstructed *Gilia* includes *Leptosiphon*, of which a species was figured last year in this Magazine (Tab. 5863), and various other genera, most of which had indeed been previously brought under *Gilia* by

Bentham, when monographing the *Polemoniaceæ* for De Candolle's Prodromus, in 1845.

Descr. A slender annual, six to eighteen inches, tall, glabrous, or slightly pilose, excessively branched upwards, the branches divaricating. *Leaves* opposite, except in the flowering branches, sessile, scaberulous, green, palmately divided into three to seven linear, almost acicular, subacute segments, one-third to one inch long, with recurved margins. *Pedicels* almost capillary, terminal and from the forks of the flowering branches. *Flowers* erect, three-quarters to one inch in diameter, white, or with a faint purple tinge. *Calyx* one-third shorter than the corolla, campanulate, with five triangular subulate lobes which are as long as the tube or shorter. *Corolla* subulate, tube very short, with a hairy ring at the throat; segments obovate, erose, very delicate. *Stamens* inserted in the throat of the corolla, filaments unequal, hairy at the very base; anthers linear-oblong, yellow. *Disk* annular. *Ovary* ovoid, glabrous, obtuse; style slender, stigmas three, linear, rather short; ovules many in each cell.—*J. D. H.*

Fig. 1, Leaves; 2, flowers; 3, corolla laid open; 4, calyx and stigma; 5, disk and ovary; 6, transverse section of ovary:—*all magnified.*

W Fitch, del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5896.

NOTHOSCORDUM aureum.

Native of California.

Nat. Ord. Liliaceæ.—Tribe Asphodeleæ.

Genus Nothoscordum, *Kunth*; (*Enum. Plant.*, vol. iv. p. 457).

Nothoscordum *aureum*; folio solitario e basi angustato elongato lineari pedali $\frac{1}{3}$ poll. diam. apice attenuato scapum gracillimum superante, spatha parva membranacea 2-valve, floribus numerosis aureis gracillime pedicellatis, pedicellis basi bracteolatis, perianthii foliolis lineari-oblongis obtusis dorso apice viridibus et rubro-marginatis, filamentis erectis e basi quadrata carnosa puberula filiformibus alternis longioribus, antheris parvis virescenti-azureis, ovario elliptico, stylo filiformi, ovulis numerosis.

Bloomeria aurea, *Kellogg in the Hesperian*, p. 437, *cum icone*.

The first notice of this plant that I have met with is in a Californian publication, for which I am indebted to Dr. Masters, F.R.S.; and where it is described by Dr. Kellogg as a new genus, *Bloomeria*, in honour of Mr. H. G. Bloomer, the Botanical Curator of the Californian Academy of Sciences, who cultivated it from bulbs discovered in New Idria by Dr. J. A. Veatch. The specimen here figured was raised from bulbs communicated to the Royal Gardens by Dr. Bolander, of San Francisco, an old and valued correspondent, in 1869, and which flowered in July of the same year.

As a genus, *Bloomeria* does not seem to me to differ from *Nothoscordum*, itself perhaps too near *Allium*, to which it is reduced by Asa Gray and others, but from which it may be distinguished by its numerous ovules. The other species of *Nothoscordum* are chiefly South American. There is one United States species which has been considered identical with a common South American, and which, if so, extends from Virginia to Philadelphia—a very unusual range for a plant of this family; this is the *Allium striatum*, Jacq.

April 1st, 1871.

(Tab. nost. 1035 and 1524). Another species, much more closely allied to *N. aureum*, is the *N. maritimum*, Torrey, of California, which differs in its much smaller size and numerous leaves. Lastly, in most of the *Nothoscorda* the filaments are merely dilated at the base; but in *N. aurea* and *N. maritima* they are suddenly dilated into quadrate fleshy bodies.

Descr. *Bulb* small, about the size of a hazel-nut, pale green. *Leaf* solitary, a foot long, very narrow, about one-third of an inch in diameter in the middle, narrow-linear, attenuate at both ends, green, rather fleshy, concave, convex on the back, obscurely nerved. *Scape* very slender, about as long as the leaf. *Spathes* two, small, membranous, enclosing numerous membranous bracteoles. *Flowers* in a spreading many-flowered umbel. *Pedicels* unequal, very slender, curved, one inch to two inches long. *Perianth* rotate, one inch in diameter, golden-yellow; segments linear-oblong, obtuse, with a short green dorsal rib towards the tip on the back, where the margins are reddish. *Filaments* erect, filiform above the quadrate fleshy glandular base; anthers small, greenish-blue, oblong. *Ovary* elliptic, obtuse, 3-furrowed; style filiform, stigma obscurely 3-lobed; ovules numerous, in two series in each cell.—*J. D. H.*

Fig. 1, Flower; 2, stamen; 3, ovary; 4, transverse section of ditto:—*all magnified.*

W Fitch del et lith

Vincent Brooks, Day & Son, Imp.

Tab. 5897.

BEGONIA crinita.

Native of Bolivia.

Nat. Ord. Begoniaceæ.

Genus Begonia, *Linn.*; (*Benth. and Hook. f. Gen. Pl.*, vol. i. p. 841).

Begonia *crinita*; caule erecto folioso petiolisque rubris pilis elongatis patentibus laxe crinitis, foliis valde obliquis dimidiatis ovato-cordatis acuminatis margine lobulatis et argute dentatis viridibus pilosis subtus pallidioribus v. purpurascentibus, petolis rubris, stipulis ovato-lanceolatis recurvis viridibus, cymis erectis dichotomis, bracteis viridibus oppositis latis concavis ciliatis, floribus roseis nutantibus subternis intermedio ♂ longius pedicellato; fl. ♂ perianthii foliolis 4, 2 exterioribus late ovatis obtusis, 2 interioribus multo angustioribus obovato-oblongis, staminibus in capitulum confertis, filamentis brevibus, antheris late obovoideis, fl. ♀ perianthii foliolis 5 subæqualibus obovato-oblongis, stigmatibus 3–2-lobis, ramis brevibus tortis fascia papillosa basi continua cinctis, placentis 2-partitis undique ovuliferis, capsula 3-alata, ala dorsali triangulari acuta.

Begonia crinita, *Oliver in Herb. Hook.*

Specimens of this very elegant *Begonia* were sent by Messrs. Veitch, to the Herbarium of the Royal Gardens, in July, 1866, and again in 1867, and determined to be new by Professor Oliver, who gave it the above name. It was introduced by Messrs. Veitch's able South American collector, the late Mr. Pearce, from the Bolivian Andes, it is supposed; but as that energetic traveller visited various parts of the Cordillera, absolute confidence cannot be placed in the reputed habitat. There is a remarkable tendency in the branches to develop hairs on that surface only which faces the petiole of the leaf inserted below it, the petiole itself being hairy all round.

I know of no very close ally of this species, which is not clearly referable to any of A. De Candolle's sections of this extensive and very difficult genus. The specimen here

figured is from Mr. Wilson Saunders's rich collection. Those from Mr. Veitch's nursery were much stouter in the stem, and had deep rose-coloured flowers.

Descr. A foot high, stout or slender, branched, leafy. *Stems* and branches terete, vivid red, more or less covered with long white, spreading, rather stiff hairs. *Leaves* two to five inches long, dimidiate, ovate-cordate, very oblique, acuminate, margin lobulate, and acutely toothed, dark green and shortly hairy above, glabrous except on the ribs of the under surface, which is pale green, or faintly purplish; petioles terete, red, and hairy, like the stems. *Stipules* ovate-lanceolate, recurved, green. *Flowers* one and a half inches in diameter, dark or pale rose-red, in terminal lax dichotomous cymes, horizontal or nodding, usually in threes, the central longer pedicelled and male. *Male flower*:—*perianth* 4-leaved; two outer leaves broadly ovate, obtuse; two inner smaller, obovate-oblong. *Stamens* many, in a globose head, filaments short; anthers short, obovoid, obtuse. *Female flower*:—*perianth* of five obovate oblong-obtuse leaves. *Styles* three, stigmatic arms short, with a continuous twisted papillose band; ovules very many, on all surfaces of a bipartite placenta. *Young fruit* 3-gonous, with 2 rounded, and one triangular acute wing.—*J. D. H.*

Fig. 1, Stamen; 2, female flower, with perianth removed; 3, transverse section of ovary:—*all magnified.*

1
2.
3.

Tab. 5898.

CHLOROCODON Whiteii.

"*Mundi-root*" *of Natal.*

Nat. Ord. Asclepiadeæ.—Tribe Periplocæ.

Gen. Char.—Calycis 5-partiti segmenta late ovata acuta. *Corolla* 5-partita, rotato-campanulata, herbacea, segmentis triangulari-ovatis, tubo basi corona carnosa depressa undulata 5-loba aucto, lobis coronæ emarginatis dorso processubus totidem erectis lineari-ligulatis apice 2-fidis gynostegium superantibus instructis. *Antheræ* sessiles, triangulari-ovatæ, in conum conniventes stigmati adnatæ, glabræ; corpuscula (v. bursiculæ polline repletæ) glandulæ ovatæ affixæ, teretia, apice 2-fida, dorso longitudinaliter sulcata. antice fissa; pollen e granulis 4-compositum. *Stigma* depresso-conicum.—Frutex Natalensis, *volubilis, alte scandens, ramulis teretibus glabris.* Folia *opposita, breviter petiolata, late ovati-oblonga, abrupte acuminata, basi cordata, supra setulis minutis appressis conspersa, subtus minute puberula.* Petioli *vagina herbacea margine recurva dentata connati.* Flores *majusculi, virescentes, intus basi purpurascentes, in cymas axillares ramosas dispositi.*

Chlorocodon *Whiteii.*

In 1867 I received from the Rev. Dr. Brown, late Colonial Botanist at the Cape of Good Hope, a letter addressed to him by A. S. White, Esq., of Fundisweni, Natal, concerning a plant, the aromatic roots of which are extensively collected and sold by the native tribes as "Mundi" or "Mindi," and used by them as a stomachic. So largely indeed was it sought that the plant had become rare in that district, and it was with difficulty that Mr. White procured the roots, which Dr. Brown transmitted to Kew, but which unfortunately arrived in a lifeless state. Mr. White further described the Mundi as climbing to the tops of the loftiest trees, with roots spreading amongst rocks and stones to a distance of fifteen to twenty feet from the stem; adding that it was never found more than a few miles from the sea, and that the nearer the sea it grew the sweeter and better was the flavour of the root. On a future occasion Mr. White

sent me a bundle of the roots, which resembled liquorice-root, but had lost all flavour and virtue; and in 1869 I had the pleasure of receiving from him living roots in a Ward's case, which grew vigorously, and the plant being trained up the rafters of a moderate sized warm greenhouse, was soon thickly covered with leaves, and flowered in August 1870.

As far as I can determine, the Mundi belongs to a very distinct genus of Asclepiads from any hitherto published, though allied to the Indian *Brachylepis*, to which I have given the name of *Chlorocodon*, in allusion to the bell-like green flowers. It is to be hoped that experiments on the properties of the root will be instituted in Natal, and the results made known.

Descr. A tall, leafy, twining, deep green climber. *Stems* terete, glabrous, or nearly so. *Leaves* opposite, shortly petioled, six to ten inches long, broadly oval-oblong, abruptly acuminate, cordate at the base, minutely setulose on both surfaces; midrib with often a few erect short bristles on the upper surface. *Petioles* short, joined by a thick short stipule-like sheath with reflexed and toothed edges. *Flowers* three-quarters of an inch diameter, in axillary corymbose many-flowered cymes; pedicels stout, with small bracts at the base. *Calyx-lobes* small, ovate, acute. *Corolla* between rotate and campanulate, leathery, green; segments ovate, acute, purple towards the base internally, where there is a thickened ring, swelling into 5-notched lobes that are opposite the sepals; at the back of each lobe and adnate to it, is a slender, erect, flat, notched process. *Anthers* triangular ovate, meeting in a cone over the capitate stigma. *Pollen* contained in five slender brown bursæ, that open in front, are bifid at the point and grooved down the back, and attached at the base to an ovate gland.—*J. D. H.*

Fig. 1, Flower, with the corolla cut away; 2 and 3, pollen pouches:—*both magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5899.

PHILODENDRON Williamsii.

Native of Brazil.

Nat. Ord. Aroideæ.—Tribe Philodendreæ.

Genus Philodendron, *Schott*; (*Prod. Syst. Aroid.*, p. 219).

Philodendron *Williamsii*; trunco crasso suberecto cicatricato, foliis longe petiolatis 2-3-pedalibus sagittatis acutis lobis posticis oblongo-ovatis obtusis, costis venisque subtus luride rubro-purpureis, costis loborum posticorum basin versus sinus marginalibus, venis patentibus, venulis numerosissimis, petiolo elongato terete lævi supra canaliculato, pedunculis solitariis axillaribus spatha viridi intus flavescente pedali oblongo-cymbiformi basi subæquali attenuato, spadice cylindrico spatham subæquante obtuso basi dorso spathæ breviter adnato, infra medium paulo constricto, parte supra constrictionem inclinato lateraliter protruso, antheris elongato-cuneatis apice truncato trapæzoideo, poris minutis, ovariis 4-gonis multilocellatis, vertice late intruso, stigmatibus numerosis adnatis breviter decurrentibus, ovulis in loculis numerosis.

This noble Aroid has been for years a well known ornament of the aquarium near the Palm House at Kew, growing in a pot the base of which is immersed, and forming a crown of bright green foliage, six feet in diameter, and four to five feet in height. It was sent to Kew by Mr. Williams, of Bahia, many years ago, flowers annually, and would have been published in this Magazine ere this, but for the difficulty of naming the plants of this genus, which embraces upwards of one hundred and fifty species, many of them most imperfectly described. As however it agrees with none of those contained in Schott's excellent monograph (1860), has not since been figured in any publication accessible to me, and has not been recognised by the many continental botanists and horticulturists who have seen it at Kew, I am emboldened to describe it as new, and give it the name

of the highly valued correspondent who contributed it to our collections.

Descr. *Trunk* two to four feet high, two to three inches in diameter, branched, brown, covered with suborbicular leaf scars, emitting numerous cylindric brown roots half an inch in diameter. *Leaves* numerous, one to two and a half feet long, sagittate, bright green, with pale veins above, paler beneath, with dull purple midrib and veins, coriaceous, acute or cuspidate, anterior portion obscurely lobed, with five to six pairs of spreading principal veins and innumerable intermediate ones; posterior lobes oblong-ovate, obtuse, costa of these marginal at the base of the sinus only; petiole two to two and a half feet long, slender, terete, grooved above, thickened at the base but not at the top, quite smooth, green. *Peduncle* axillary, solitary, as thick as the thumb, as long as or shorter than the spathe, green, cylindric. *Spathe* a foot long, convolute, then gaping and boat-shaped, obtuse, apiculate, very thick and herbaceous, green, much thickened but not inflated at the base, where it merges into the peduncle, bright green, paler and yellowish internally. *Spadix* about equalling the spathe, stout, cylindric, obtuse, cream-coloured, constricted below the middle, the long upper male portion lolling laterally out of the spathe; lower female part stouter, base oblique and dorsally adnate to the spathe. *Anthers* elongate-obpyramidal, with truncate tips and minute pores. *Ovary* obtuse, 4-angled, columnar, many-celled, deeply hollowed out at the top, which is covered with adnate stigmas that are reflected and decurrent on the surface; ovules numerous in each cell.—*J. D. H.*

Fig. 1, imperfect stamens; 2, perfect ditto; 3, ovary; 4, vertical, and 5, transverse section of ditto:—*all magnified.*

tch, del. et lith.

Vincent Brooks Day & Son, Imp.

Tab. 5900.

BAPTISIA leucophœa.

Native of the United States.

Nat. Ord. Leguminosæ.—Tribe Podalyrieæ.

Genus Baptisia, *Ventenat*; (*Benth. and Hook. f. Gen. Pl.*, vol. i. p. 466).

Baptisia *leucophæa*; herba humilis, plus minusve pilosa v. pubescens, ramis divaricatis flexuosis, foliis subsessilibus palmatim 3-foliolatis, foliolis anguste oblongo-obovatis-oblanceolatis v. subspathulatis, stipulis bracteisque magnis foliaceis ovato-lanceolatis persistentibus, racemis elongatis reclinatis, floribus secundis pallide flavidis, pedicellis elongatis gracilibus, ovario villoso, legumine ovoideo longe acuminato.

Baptisia leucophœa, *Nutt. Gen. Pl. N. Am.*, vol. i. p. 282. *DC. Prod.*, vol. ii. p. 100. *Torr. and Gr. Fl. N. Am.*, vol. i. p. 385. *A. Gray, Bot. N.U. States*, p. 107. *Chapman, Bot. S.U. States*, p. 112.

Baptisia bracteata, *Muhl.* Cat. *ex Elliott's Sketch*, vol. ii. p. 468. *DC. l. c.*

A hardy herbaceous plant, very ornamental, a native of dry woods and open places throughout the United States, from Michigan and Wisconsin to Texas and Georgia. It was introduced into England by Edward Leeds, Esq., of Longford Bridge, Manchester, to whom I am indebted for the specimen here figured, which was raised by him from seed collected in Iowa State, and which flowered in July 1870.

Baptisia is wholly a North American genus, containing fourteen species, of which all are supposed to be hardy, and many are certainly well worthy of cultivation; two are figured in this Magazine as *Podalyrias*, *P. alba*, tab. 1177, and *P. tinctoria*, tab. 1099, which yields a coarse indigo; and a third (tab. 3121) is the highly curious *B. perfoliata*, with simple sub-orbicular perfoliate leaves and solitary flowers; all have gone out of cultivation.

Descr. A low perennial herb, one to two feet high, very variable in amount of pubescence, sometimes glabrous when

old. *Stems* stout, zigzag, almost horizontal, leafy. *Leaves* nearly sessile, trifoliolate; leaflets sessile, one to three inches long, very variable in length and breadth, obovate, oblanceolate, or obovate-spathulate, acute, reticulately veined, turning black when dry, as do the stems. *Stipules* very large, leafy, ovate-lanceolate, acute. *Racemes* often a foot long, very-many-flowered. *Flowers* crowded, subsecund, pedicels ascending, one to one and a half inches long; bracts large, leafy, ovate-lanceolate, acute, spreading and reflexed. *Calyx tube* subcampanulate; lobes four, short, subacute. *Corolla* yellowish-white; standard orbicular, clawed, notched, reflexed; wings oblong, notched at the base, claw slender; keel boat-shaped, equalling the wings, also with a slender claw. *Filaments* glabrous; anthers small. *Ovary* slender, villous; stigma simple. *Pod* large, ovoid, turgid, hoary, long pointed.—*J. D. H.*

Fig. 1, Flower with petals removed; 2, standard; 3, wing; 4, keel; 5, ovary:—*all magnified.*

Tab. 5901.

NERINE PUDICA.

Native of S. Africa.

Nat. Ord. Amaryllideæ.—Tribe Amarylleæ.

Genus Nerine, *Herbert*; (*Amarillydaceæ*, p. 283).

Nerine *pudica*; bulbo elongato-ovideo, foliis lineari-elongatis obtusis concavis, scapo gracili, spathis subulato-lanceolatis rubris, ovario subhorizontali, perianthio subcampanulato fere regulari, foliolis oblanceolato-oblongis apiculatis non undulatis candidis medio roseo-tinctis, genitalibus declinatis, antheris inclusis purpureis, stigmatibus patulis.

I fail to find either a description answering to this plant, or a specimen in the Kew Herbarium; it flowered in the Royal Gardens in October, 1868, but I am unaware of its precise native locality, or of its introducer: its nearest ally is *N. flexuosa* (Bot. Reg. t. 172), which differs in the more irregular perianth, whose segments are narrower and much undulated. Besides the shape of the flower, *N. pudica* is distinguished from all other *Nerines* known to me by the purity of the white perianth segments, delicately streaked with crimson down the centre.

The *Nerines* form a most beautiful group of bulbous plants, and were great favourites amongst cultivators half a century ago. The Rev. Mr. Herbert, in his excellent remarks on the genus, observes that they require a vigorous autumnal growth of leaf, under warmth enough to excite, but with air enough to prevent their growing weak; as with their congener, the Guernsey Lily, they are autumn flowerers, and should be allowed a three months' rest and drought, between May and September.

Descr. *Bulb* one and a half to two inches long, narrow ovoid or flaggon-shaped. *Leaves* six to eight inches long by

a quarter to one-third inch broad, narrow linear, obtuse, concave, not keeled or ribbed. *Scape* slender, exceeding the leaves, bright green. *Spathes* scarious, one to two inches long, gradually narrowed from a broad base, pink. *Flowers* six to eight, nearly horizontal, one and a half inches long; pedicels one to two inches long, green, slender. *Ovary* nearly horizontal, of three subglobose lobes, green. *Perianth* campanulate, pure white, with a red streak down the centre of each leaflet on both surfaces, most strongly marked towards the base on the inner surface, and towards the tip on the outer; leaflets half an inch broad, oblanceolate, apiculate, spreading, not waved, nearly equal and regularly disposed, the four outer slightly upcurved. *Filaments* shorter than the perianth, declinate, three shorter than the others, tips upcurved; anthers linear-oblong, purple. *Style* slender, declinate; stigma shortly linear.—*J. D. H.*

Fig. 1, Flower with perianth removed; 2, transverse section of ovary:—*both magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

TAB. 5902.

EPIDENDRUM EVECTUM.

Native of New Grenada?

Nat. Ord. ORCHIDEÆ.—Tribe EPIDENDREÆ.

EPIDENDRUM, *Linn.*; (*Lindl. Fol. Orchid.*, part 2, p. 1).

EPIDENDRUM (Amphiglottium) *evectum*; caulibus gracilibus valde elongatis teretibus ramosis radicantibus, ramis apices versus foliosis, foliis distichis 4-5-pollicaribus oblongo-lanceolatis obtusis emarginatis planiusculis, racemo brevi densifloro, bracteis parvis subulatis, floribus patentibus $1\frac{1}{4}$-$1\frac{1}{2}$ poll. diam. læte roseo-purpureis, sepalis petalisque anguste obovatis obtusis, labello columnæ adnato 3-lobo, lobis profunde laceris, lateralibus brevibus quadrato-cuneatis, intermedio 2-fido lobis divaricatis sinu acuto, disco callo obtuse triangulari sublobulato et basi (inter lobos laterales labelli) tuberculis 2 parallelis elongatis instructo.

I advance this fine plant as a new species with great hesitation, though supported by the authority of Reichenbach f. himself, who has kindly taken great trouble to identify it with the numberless closely allied species in the sub-section, (*Schistochila tuberculata*,) to which it clearly belongs. It has been cultivated in Kew for many years, flourishing in the cool end of an "intermediate" Orchid house, where it forms a very conspicuous feature, from the great length of the stems, the bright purple of its flowers, which last for a long time, and its branching, rooting habit. Its nearest ally appears to me to be *E. Lindeni*, Lindl., from which it differs in the longer leaves, and more deeply laciniate lip, with the midlobe divided into two spreading segments, like a black-cock's tail. There is, however, very little to distinguish it from the descriptions of *E. fastigiatum*, Lindl., *dichotomum*, Presl., *Jamesoni*, Rchb. f., *ellipticum*, Graham, and others, of which the West Indian *E. elongatum*, Jacq. (Tab. nost. 611), is the first published type, and which all differ by very variable

characters (especially those of the disk and toothed margins of the lip). As it is, *E. evectum* is by far the handsomest form of the section that has hitherto flowered in England, (with the exception of those with branched racemes), and from its free growth and facility of cultivation, will always prove an acquisition in the cool Orchid house. It was probably sent by Purdie from the New Grenadan mountains, but all record of its origin has long been lost.

Descr. *Stems* fascicled, swollen at the base, three to five feet long, flexuous, branched, as thick as a swan's quill, leafy towards the tips. *Leaves* four to six inches long by one and a half to two inches broad, sessile, oblong-lanceolate, obtuse, emarginate, coriaceous, plane, sheaths rather short. *Peduncle* long, slender, clothed with distant, appressed scarious bracts, the lower of which are sheathing with subulate points, the upper small subulate without sheaths. *Raceme* four to six inches long, by three to four inches in diameter, lax, subcylindric, many-flowered; bracts small, subulate; pedicels spreading and recurved, with the slender ovary one to one and a half inches long. *Perianth* one and a quarter to one and a half inches in diameter, bright rose-purple. *Sepals* and *petals* similar, narrow obovate, obtuse. *Lip* adnate to the column, rather longer than the sepals, 3-lobed nearly to the base, lobes all deeply cut and fringed; lateral reflexed, cuneate-quadrate; middle lobe larger, divided into two wide spreading, lacerate, subquadrate lobes, with an acute sinus and apiculus between them; disk with an obtusely triangular, obscurely-lobed callosity, and two linear parallel tubercles at the base.—*J. D. H.*

Fig. 1, column and lip :—*magnified.*

Vincent Brooks, Day & Son, Imp.

Tab. 5903.

HÆMANTHUS deformis.

Native of Natal.

Nat. Ord. Amaryllideæ.—Tribe Amarylleæ.

Genus Hæmanthus, *Linn.*; (*Herbert's Amaryllidaceæ*, p. 232).

Hæmanthus *deformis;* bulbo compresso crasso humili depresso flavo-virescente, foliis ad 4 late obovato rotundatis sessilibus patenti-recurvis 3-4 poll. latis supra hirsutis subtus pubescentibus immarginatis brevibus, scapo brevissimo, bracteis ad 6 obovato-oblongis obtusis totis albis ciliatis, floribus numerosis candidis, perianthii laciniis erectis linearibus obtusis, antheris exsertis pallidis, stigmate breviter 3-lobo, ovulis pendulis.

A very singular and indeed grotesquely ugly Cape bulb, with nothing but its curious form to recommend it for culture; but to those who delight in contemplating every adaptation of their form and structure to environing conditions that plants present, or who seek to illustrate the botanical features of a country by cultivating groups of its plants, such a one as this presents many points of great interest. Dean Herbert remarks that there are two sections of *Hæmanthus*, one with cylindric sheathing petioles, and consequently ovoid cylindric bulbs, which flower and leaf at the same time (see Tab. nost. 961, 1995, 1315, 4745, 5314, 5378); and another with sessile broad-based leaves, that do not sheath, and which consequently have compressed bulbs; these flower before the leaves are fully produced (Tab. nost. 1075, 1239, 1618, 3373, 5532). To these has since been added a third section with cylindric bulbs, that flower before the leaves are fully developed (Tab. nost. 3870 and 5881). To me it appears that the genus may be better divided into those with spreading, and those with erect perianth segments, a character to which Mr. Herbert gives secondary value;

whilst of the latter there are again two sections, one with terete bulbs and usually petioled more or less plaited leaves; the other, with compressed bulbs and distichous thick flat leaves, to which the present and a few other species belong.

Hæmanthus deformis is a native of Natal, and was sent to the Royal Gardens in 1869, from those of Natal, by their zealous superintendent, Mr. M'Ken, and it flowered in March, 1871; its similarity in habit to certain species of the liliaceous genus *Massonia* is very striking.

Descr. *Bulb* very broad, low, green, four to five inches in diameter, slightly compressed, yellow green. *Leaves* about two pairs, three and a half to four inches long and broad, spreading and recurved, distichous, orbicular or obovate-orbicular, scarcely sheathing, not undulate nor margined, dark green, smooth, hairy above, pubescent beneath. *Scape* very short, sessile amongst the leaves. *Head* compressed, parallel to the bulb, two inches high, one and a half inch in its longest diameter. *Involucral spathes* about six, equal, erect, obovate-oblong, obtuse, ciliate, pure white. *Flowers* numerous, pure white, shorter than the involucre. *Perianth-tube* shorter than the erect linear obtuse lobes. *Stamens* exserted; anthers pale yellow. *Ovary* obovoid; style slender; stigmas three, small, acute.—*J. D. H.*

Fig. 1, Flower; 2, perianth lobe, and stamens; 3, ovary, with style and stigma; 4, transverse section of ovary:—*all magnified.*

W. Fitch, del et lith.

Vincent Brooks Day

Tab. 5904.

DRYMODA picta.

Native of Moulmein.

Nat. Ord. Orchideæ.—Tribe Vandeæ?

Genus Drymoda, *Lindl.* (*Sert. Orchid.* t. 8 C.).

Drymoda *picta*; aphylla, pseudobulbis depresso-planis orbiculatis cortice, appressis, scapo solitario 1-flore filiformi basin versus squamis 2 hyalinis instructo.

Drymoda picta, *Lindl. l.c.* *Walp. Ann.* vol. vi. p. 467.

One of the smallest and most curious of Orchids, hitherto only known from a drawing made by the late William Griffith in Mergui in the Malayan peninsula, in 1835, and forwarded by him to Dr. Lindley, who published it in his magnificent "Sertum Orchidaceum," in 1838, whence the description was copied into Walper's Annalen, as quoted above. I have in vain sought amongst Griffith's published posthumous papers for any notice of this plant, as also amongst his drawings and MSS., which are preserved in the library at Kew. His original sketch, accompanied by his specimens, is in Dr. Lindley's Orchid collection, also now at Kew; but I found no specimens amongst Griffith's general collections which have been incorporated with the Kew Herbarium. This however is easily accounted for by the fact, that many of the Griffithian collections, and especially the Burmese, were destroyed by damp and vermin in the cellars of the old India House, where they lay in open chests for many years before being transferred to Kew.

The specimen of *Drymoda* here figured formed part of a

very valuable miscellaneous collection of Orchids sent by the Rev. C. Parish, from Moulmein, in 1870, and flowered in February and March of the present year. From a comparison with Griffith's figure, it will be seen that the latter is remarkably correct, the only differences I perceive are, that in Griffith's figure the flower is represented in an inverse position, and much yellower, the scape also is stouter, red, and bears several sheaths, which I do not observe in his specimens.

Descr. *Pseudobulbs* clustered, or in a series, discoid, appressed to the bark, dull green, one-third to one-half inch in diameter, with a minute central mamilla, from which springs the scape, subtended by an exceedingly small ovate-subulate scale, that is the only representative of the leaf; surface covered with minute white scales. *Scape* capillary, one to one and a half inch long, with one or more appressed sheaths near the base, greenish yellow. *Flower* solitary, two-thirds of an inch long from the dorsal sepal to the lip, inclined or horizontal. *Dorsal sepal* very small, ovate, acute, yellow green; *lateral* sepals forming wings at the apex of a long curved semiterete green purple-spotted stipes, which projects from the base of the column, carrying the lip and lateral sepals far from the column and petals, spreading and recurved, obliquely ovate-lanceolate, concave, with gibbous incurved margins, yellow-green with dull purple bands. *Petals* very minute, spreading on each side the column, suborbicular, green. *Lip* ascending between the lateral sepals from the apex of the aforesaid stipes, deep purple, pedicelled, much smaller than the lateral sepals, ovate, 3-lobed, subacute, convex and hairy on the disk. *Column* very short, with two long projecting oblong-obtuse yellow purple-spotted wings that are half as long as the stipes of the conjoined lateral sepals and lip. *Anther* small, convex, purple-topped. *Pollen-masses* connate into a 4-lobed mass, which is sessile on an exposed orange-yellow subglobose gland as big as themselves.—*J. D. H.*

Fig. 1, whole plant; 2, front, and 3, lateral view of flower; 4, column and base of ovary; 5, front, and 6, lateral view of pollen:—*all magnified.*

2

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3.

W. Fitch, del. et lith.

Vincent Brooks Day & Son, Imp.

Tab. 5905.

RHODODENDRON SINENSE.

Native of Japan and N. China.

Nat. Ord. Ericeæ.—Tribe Rhododendreæ.

Genus Rhododendron, *Linn.*; (*Maximowicz in Mem. Acad. Imp. Sc. Petersb.*, vol. xvi. No. 9, p. 13).

Rhododendron (Azalea) *Sinense;* ramulis petiolis pedunculisque setoso-pilosis, foliis obovato-v. oblanceolato-oblongis obtusis glanduloso-apiculatis pilosis hirsutisve nervis utrinque costæ ad 10 patulis parallelis, floribus 5-10 subpræcocibus umbellatis longe pedunculatis, sepalis brevibus ovatis ciliatis, corolla infundibulari-campanulata extus puberula ad medium 5-loba, lobis elliptico-ovatis, staminibus 5 stylo vix brevioribus, capsula ovoideo-oblonga profunde sulcata parce setosa lucida.

Rhododendron sinense, *Sweet, Brit. Fl. Gard.*, vol. iii. t. 290. *Maximowicz. l.c.*

Rhododendron molle, *Sieb. and Zucc. Fl. Jap. Fam. Nat.*, part 2, p. 131.

Azalea sinensis, *Lodd. Bot. Cab.* vol. ix. t. 885.

Azalea mollis, *Bl. Bijdr.* 853. *Regel Gartenfl.* 1867, p. 289, t. 556.

Azalea japonica, *A. Gray*, in *Mem. Amer. Acad. Sc.* vol. vi. p. 400.

Botanists are now pretty well agreed in considering that *Azalea* can no longer be considered a distinct genus from *Rhododendron;* the characters taken from habit, foliage, form of corolla, number of stamens and ovarian cells, which have hitherto been used to distinguish *Azalea,* all reappearing, singly or several together, in many of the numerous species of Rhododendron that have lately been discovered in Northern India, the Malayan Islands, China, and Japan. I have therefore followed the eminent Japanese traveller and botanist, Maximowicz, who published only last year a most elaborate monograph of the *Rhododendreæ,* in assuming Sweet's old name of *Rhododendron sinense* for the *Azalea mollis* of more recent authors.

June 1st, 1871.

R. sinense is a native of Alpine shrublands in Japan, and is also cultivated both in Japan and China, whence it was introduced into England first in 1824, and again by Fortune in 1845. It is however still a very scarce plant in English gardens. The specimen here figured was communicated by Mr. Bull, F.L.S., and flowered in his establishment in Chelsea in March of last year. The flowers vary much in colour, from a dull, almost greenish-yellow, to orange-yellow, or bright orange-red.

Descr. A small rigid shrub, with spreading naked branches, the younger more or less clothed with soft hairs, as are the petioles, peduncles, calyx, and both surfaces of the leaves. *Leaves* spreading, one and a half to two inches long, membranous, shortly petioled, obovate- or oblanceolate-oblong, obtuse, with a glandular apiculus, ciliate, hairy on both surfaces, nerves about ten on each side of the midrib, spreading; petiole one-quarter to one-third of an inch long. *Flowers* five to ten in an umbel; pedicels one to two and a half inches long. *Calyx-lobes* small, obtuse. *Corolla* between funnel and bell-shaped, 5-lobed to the middle, lobes ovate-oblong obtuse, varying in colour from pale dirty yellow to orange-red. *Stamens* five, filaments pubescent towards the base; anthers small, yellow. *Ovary* hairy, 5-celled; style slender, pubescent below, stigma small. *Fruit* (described by Maximowicz as) ovoid-oblong, deeply grooved, shining, sparingly hairy.—*J. D. H.*

Fig. 1, Stamen; 2, calyx, ovary, style, and stigma; 3, transverse section of ovary:—*all magnified.*

Vincent Brooks Day & Son. Imp.

Tab. 5906.

ANDROSACE carnea, var. eximia.

Native of the Auvergne Alps.

Nat. Ord. Primulaceæ.—Tribe Primuleæ.

Genus Androsace, *Tourn.*; (*Endl. Gen. Plant.*, p. 730).

Androsace *carnea*; laxe cæspitosa, caulibus brevibus suberectis, foliis dense confertis patenti-recurvis linearibus v. subulato-linearibus subacutis planis enerviis sparse ciliatis v. ciliatis et puberulis, pedunculo stellatim tomentello, floribus capitato-umbellatis roseo-purpureis, calyce campanulato 5-fido, lobis acutiusculis tubum corollæ æquantibus.

Androsace carnea, *Linn. Sp. Pl.*, 204. *Duby in DC. Prod.*, vol. viii. p. 51. *Reich. Ic. Crit.* t. 580. *Flor. Germ.* vol. xvii. t. 1112. *Gren. and Godr. Fl. Franc.* vol. ii. p. 456.

Androsace Halleri, *Gmel. bad.* vol. iv. p. 151. t. 8.

Aretia Halleri, *Linn.*;—*Hall. Helv.* t. 17. *Plukenet Almag.* t. 108. f. 5.

Var. *eximia*, laxius et latius cæspitosa, foliis laxioribus minus rigidis valde recurvis longioribus linearibus sparse puberulis, floribus majoribus $\frac{1}{3}$ poll. diametro. Ic. nost. t. 5907.

A comparison of this form of *Androsace carnea*, with the usual state of that plant as it occurs in Dauphiny, the Pyrenees, Savoy, and Switzerland, shows it to be characterized by its greater size, looser cushion-like tufts, longer, more linear and uniformly recurved leaves, with sparse pubescence, and much larger flowers, of a very fine rose purple colour; so great indeed are these differences, that when pots of living specimens of this and the ordinary form are placed side by side, it is hard to believe that they are not specific; but the comparison of an extensive suite of herbarium specimens, shows so many intermediate forms, together with so many other varieties, that I believe it will be found impossible to separate them by any certain character. Fortunately too I have been able to submit the flowering specimens to M. Cosson, of Paris,

and Mr. J. Ball, both accomplished European botanists, who recognise it as a variety of *carnea*, and one which they have met with both in the Pyrenees and Auvergne.

The Royal Gardens are indebted for this lovely Alpine to Mr. G. Maw of Brosely, who collected it in the Pic de Sancy, Mont Dore, in 1870, and who presented us with a fine plant of it in the early spring, from which this figure was taken.

Descr. *Tufts* six to twelve inches and upwards broad, of a lively green, formed of numerous almost globular inclined rosettes, one inch in diameter. *Leaves* one-half to three-quarters of an inch long, close set, uniformly recurved, linear, subacute, plane, ciliate on the edges, laxly pubescent on both surfaces, with simple or forked hairs, hardly dilated at the base. *Scape* short or almost suppressed, lengthening in fruit, robust, clothed with stellate pubescence, as are the bracts, pedicels, and calyces, about 5-flowered; bracts erect, oblong, subacute, gibbous at the base, equalling or shorter than the pedicels. *Calyx* campanulate, turbinate at the base, segments ovate-oblong, subacute, green. *Corolla* rose-purple, with a yellow eye, one-third of an inch in diameter; lobes obovate, rounded at the tip; throat closed by short folds or scales. *Ovary* depressed, globose, glabrous. *Capsule* ovoid. *Seeds* black, oblong, granulate.—*J. D. H.*

Fig. 1, Leaf; 2 and 3, flowers; 4, corolla laid open; 5, ovary, style, and stigma:—*all magnified.*

Tab. 5907.

FUCHSIA sessilifolia.

Native of the United States of Colombia.

Nat. Ord. Onagrarieæ.

Genus Fuchsia, *Linn.*; (*Benth. and Hook. f. Gen. Pl.*, vol. i. p. 790).

Fuchsia *sessilifolia*; ramulis ultimis puberulis, ceterum glaberrima, foliis sessilibus oppositis et 3-4-natim verticillatis elliptico- v. oblongo-lanceolatis acuminatis remote denticulatis basi acutis, floralibus minoribus, floribus breviter pedicellatis racemoso-paniculatis pollicaribus, ovario elliptico, calycis tubo rubro basi paulo inflato viridi, segmentis anguste lanceolatis petala parva ovata obtusa sanguinea superantibus, genitalibus breviter exsertis, stigmate globoso 4-lobo, bacca oblonga polysperma.

Fuchsia sessilifolia, *Benth. in Plant. Hartweg*, p. 176. *Walp. Rep.*, vol. v. p. 667.

Discovered by Professor Jameson, of Quito, in 1835, in woods near Pernello in the valley of Pasto, amongst the Andes of Colombia; and subsequently gathered by Hartweg, in 1842, in wooded valleys of Guyan, on the western slopes of Pichincha, from whose collections it was first described by Bentham. There are also specimens in the Hookerian Herbarium, collected by Jervoise in Antioquia, and by Triana at an elevation of 7000 ft. in the forests of Quindiu, so that it has probably a pretty wide range in the Colombian Andes. It is a greenhouse plant, and only recently introduced into this country by Mr. Isaac Anderson-Henry, F.L.S., Hay Lodge, Edinburgh, who raised it from seeds sent by Professor Jameson in 1865. I am indebted to that gentleman for the specimen here figured, which flowered in June, 1866. As a species it is abundantly distinct, and may be recognised by its pendulous habit, bright red 4-angled stems, sessile usually whorled leaves, and crowded subpanicled inflorescence.

June 1st, 1871.

Descr. A leafy bush, three to six feet high, quite glabrous except the youngest parts, which are slightly hairy; branches bluntly 4-angled, red. *Leaves* sessile, rarely opposite, usually whorled in threes and fours, three to five inches long, lanceolate or elliptic-lanceolate, acuminate, acute at the base, toothed, bright green and shining with a red mid-rib, often bullate between the many depressed veins. *Flowers* about one inch long, in terminal pendent crowded leafy panicled racemes; bracts or floral leaves a quarter to three-quarter inch long, lanceolate, sessile; pedicels shorter than or equalling the ovary. *Calyx-tube* narrow, slightly swollen at the green base, red above and funnel-shaped; lobes much shorter than the tube, triangular-lanceolate, acute, spreading, greenish. *Petals* shorter than the calyx-tube, broadly ovate, obtuse, blood-red. *Stamens* included. *Ovary* green, elliptic; stigma globose, 4-lobed. *Berry* oblong, half an inch long, 4-grooved. *Seeds* obliquely cuneate.—*J. D. H.*

Fig. 1, Flower :—*magnified.*

W Fitch, del et lith

Vincent Brooks, Day & Son, Lith.

Tab. 5908.

DORSTENIA Mannii.

Native of the Bight of Biafra.

Nat. Ord. Moreæ.

Genus Dorstenia, *Plumier*; (*Endl. Gen. Pl.*, p. 278).

Dorstenia *Mannii*; caule erecto rigido subnodoso simpliciusculo tomentoso, foliis petiolatis elliptico-obovatis acuminatis integerrimis v. sinuato-subdentatis utrinque glabris ad basin angustatam obtusis subcordatisve, stipulis minutis subulatis, pedunculis rameis tomentosis, receptaculis orbicularibus convexis margine processubus tentacula simulantibus elongatis ornato, alveolis masculis et fœmineis sparsis, perigonio 0.

Discovered on the river Old Calabar, in 1863, by Mr. Gustav Mann, then the intrepid collector for the Royal Gardens, now a Forest officer serving in the Bhotan province of India, and by whom living plants were sent to Kew, which flowered in November, 1865. It has also been collected in the same locality by the Rev. W. Thomson, the discoverer of *Clerodendron Thomsonæ* and many other fine plants.*

The genus *Dorstenia* is common in Tropical Africa, whence Mr. Mann has sent dried specimens of several species, but of these the present is the most singular, because of the long green processes slightly thickened towards the tips that fringe the receptacle, and pointing in different directions, resemble the tentacles of a sea-anemone; in some herbarium specimens these are one and a half inch long, and much more clubbed at the tip.

* I may here state that *Aristolochia Thwaitesii*, Hook. (Tab. nost. 4918), supposed to have been sent by Dr. Thwaites from Ceylon, proves to be a native of Old Calabar, whence living plants have been sent by Mr. Thomson to the Glasgow Botanic Garden, and communicated to me by its curator, Mr. Bullen.

June 1st, 1871.

Descr. *Stem* six to ten inches high, terete, rather flexuous, erect, somewhat swollen at the scars of the fallen leaves, densely rather scabridly, but shortly tomentose. *Leaves* four to eight inches long, two and half to four inches broad, rather membranous, elliptic or obovate, acute, narrowed at the small obtuse or subcordate base, dark green, pale beneath, obscurely sinuate-toothed, or quite entire, glabrous but opaque on both surfaces. *Petiole* one quarter of an inch to one inch, pubescent. *Stipules* minute, subulate, persistent. *Receptacle* on the stem at the scars of old leaves, peduncled, orbicular, about one inch diameter, green, pubescent on the back, very convex; margin with ten to fifteen slender, stiff, unequal processes one-half to two inches long, which are thickened towards the tip, radiate outwards and backwards, and point in different directions; peduncle half an inch long; surface of receptacle nearly smooth, green. *Stamens* and *pistils* scattered promiscuously in cavities of the disk, without any perianth.—*J. D. H.*

Fig. 1, Vertical section through the receptacle; 2, portion of ditto, showing stamens and pistil:—*both magnified.*

W Fitch, del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5909.

CURCUMA albiflora.

Native of Ceylon.

Nat. Ord. Scitamineæ.—Tribe Zingibereæ.

Genus Curcuma, *Linn.*; (*Endl. Gen. Pl.*, p. 223).

Curcuma *albiflora*; glaberrima, foliis floribus coetaneis petiolatis ellipticis ovato-oblongisve acuminatis basi acutis concoloribus, scapo brevi, spica 3-5-pollicari, bracteis oblongo-lanceolatis obtusis 2-pollicaribus erectis apice paulo recurvis viridibus superioribus gradatim minoribus omnibus floriferis, perianthio albo, exteriore spathaceo ore obliquo 2-fido, interiore subcampanulato, laciniis 3 exterioribus lineari-oblongis obtusis erectis, 2 interioribus obovato-oblongis, labello suborbiculari recurvo albo disco flavo apice emarginato, ovario gibbo, glandulis epigynis lineari-elongatis oblique truncatis, antheræ loculis basi calcaratis, calcaribus incurvis.

Curcuma albiflora, *Thwaites, Enum. Ceylon Pl.*, 316.

A very anomalous species of a large Indian genus, native of Ceylon, whose roots were sent by its describer and discoverer, Dr. Thwaites, F.R.S., to the Royal Gardens in 1862, which flowered in July of the following year. Though belonging to the genus which contains the cultivated Turmeric and Zedoary, and various wild species of which are used in Oriental cookery, I am not aware that the roots of the plant here figured have ever been so used.

The genus *Curcuma* comprises plants of very distinct habit, and of these the true Turmerics, of which *Curcuma longa*, L., is the type, flower at the same time with the leaves, and have the lower bracts connate, so that the flowers appear to grow out of pouches in the spike; to this also belongs the beautiful *C. australasiæ* (Tab. nost. 5620) and the Zedoary, *C. Zedoaria* (Tab. nost. 1546); in all these moreover the upper bracts are free, flowerless, and usually very brightly-coloured. This group is divisible into two, according as the scapes are lateral or

terminal. In the other section, of which *C. albiflora* is the only species known to me, the bracts are green, free, or nearly so, and all floriferous. In the Enumeration of Ceylon plants, *C. albiflora* is described as having a radical spike, but in our cultivated specimen the spike is sessile amongst the upper leaves and at a considerable distance from the root.

Descr. *Roots* tuberous and fascicled. *Stem* none, but the sheathing bases of the petioles which surround the scape, together form a compressed green stem one inch in diameter at the base. *Leaves* long-petioled, glabrous, five to seven inches long, elliptic or ovate-oblong, or elliptic-lanceolate, acuminate, acute at the base, somewhat plaited parallel to the nerves, deep green above, paler beneath ; petiole slender, two to three inches long, exclusive of the sheathing portion, which is as long. *Spike* sunk amongst the uppermost leaves, oblong, cylindric ; bracts all green, loosely imbricate, two inches long, oblong-lanceolate, obtuse, the upper rather longer, all flower-bearing. *Flowers* white. *Outer perianth* spathaceous, half as long as the tube of the inner, obliquely split at the mouth, and 2-fid at the tip ; inner perianth campanulate, 6-lobed, 3 outer lobes oblong, obtuse, suberect ; two inner broader and larger ; lip suborbicular, waved at the edge, notched with overlapping lobules, disk yellow. *Epigynous glands* linear, obliquely truncate. *Anther* short subquadrate ; cells with short incurved spurs. *Ovary* 3-ribbed, gibbous.—*J. D. H.*

Fig. 1, Flower ; 2, ovary and outer perianth ; 3, lip, anther, and stigma : 4. ovary, epigynous glands and base of style :—*all magnified.*

W. Fitch, del et lith.

Vincent Brooks Day & Son, Imp.

Tab. 5910.

ERIA extinctoria.

Native of Birma.

Nat. Ord. Orchidaceæ.—Tribe Malaxideæ.—§ Dendrobieæ.

Genus Eria, *Lindl.* (*Gen. et Sp. Orchid.*, p. 65).

Eria *extinctoria;* aphylla, pseudobulbis aggregatis depressis orbiculatis, scapo terminali solitario v. geminato erecto filiforme unifloro, sepalis lateralibus posticis basi longe in calcar extinctorii-forme productis, labelli tricarinati unguiculati limbo trilobo lobo centrali latiore bifido.

Dendrobium extinctorium, *Lindl. Bot. Reg.*, sub tab. 1756, No. iv.; *Walp. Annales*, vol. vi. p. 308.

Eria capillipes, *Parish MSS. in Herb. Kew.*

Like *Drymoda picta*, figured in our last number (Tab. 5904), we have here another singular little leafless Birmese Epiphytal Orchid, first collected by the late Mr. Griffith, by whom specimens were transmitted to Dr. Lindley, who briefly described it in a note in the *Botanical Register* cited above, referring it to the genus *Dendrobium*. This reference to *Dendrobium* must be attributed to some oversight in the examination of the pollinia, for these are clearly eight in number, as pointed out first by the Rev. Mr. Parish, to whom we are indebted for our specimens, which flowered in the Royal Gardens in April last.

From the same gentleman we have a careful drawing and analysis, dated 1870, to which he has appended the note:—"This little plant answers so remarkably to the description of Lindley's *Dendrobium extinctorium* that I long assumed it was it, but on examination I find it is an *Eria!*"

The specimens sent originally to Dr. Lindley were insufficient for complete examination, hence his error as to the pollinia. Specimens are in the Kew Herbarium gathered by Mr. Griffith and by Dr. Falconer.

July 1st, 1871.

Descr. *Pseudobulbs* clustered, subglobose, truncate or depressed above, one quarter to half an inch in diameter; from the centre of the depressed disk rises the slender filiform scape (or pair of scapes) from a minute scaly mammilla. *Scape* one and a half to two and a half inches long, purplish or crimson below, with one or two minute sheathing squamæ. *Flower* solitary, half to two-thirds of an inch long. *Posterior sepal* ovate, acute, white, or tinged with rose; lateral sepals obliquely ovate, acute, equalling the posterior sepal, produced below and adnate to the column, forming an extinguisher-like obtuse or retuse, slightly curved, greenish-tipped spur. *Lateral petals* oblong or oblanceolate, nearly equalling the sepals, white or faint blush. *Labellum* narrowed below into a distinct claw, with three subprominent, papillose, longitudinal ridges, more or less orange below and on the median line, transversely blotched with rose-purple above; lateral lobes broadly rounded, median lobe bifid, with rounded segments. Free apex of the *column* very short; *anthers* convex, rose or purple. *Pollen-masses* eight, in two opposed parallel pairs of four each, connate at the base.—*D. O.*

Fig. 1, Side, and 2, front view of flower; 3, labellum; 4, column; 5 and 6, lateral and front view of pollinia:—*all more or less enlarged.*

1.

W Fitch. del. et lith

Vincent Brooks Day & Son, Imp

Tab. 5911.

PASSIFLORA cinnabarina.

Native of Australia.

Nat. Ord. Passifloreæ.

Genus Passiflora, *Linn.*; (*Benth. et Hook. f. Gen. Pl.*, vol. i. p. 810).

Passiflora (Disemma) *cinnabarina*; glabra, foliis trilobis palmatisve lobis ovatis v. ovato-ellipticis acutiusculis, petiolis eglandulosis, coronâ interiore ore contracto filis in membranam integram plicatam pilosulam concretis, exteriore interiorem superante filis uniseriatis distinctis.

Passiflora cinnabarina, *Lindl. in Gard. Chron.*, 1855, p. 724 (*cum ic. xylog.*).

Disemma coccinea, *Belgique Horticole*, vol. xv. (1865), p. 289, tab. 18.

This elegant climber was first introduced by Sir Thomas Mitchell fifteen to twenty years ago. It is very nearly allied to *Passiflora Banksii*, Benth. ("Flora Australiensis," iii. 312), the *Disemma coccinea* of De Candolle, differing in the absence of glands on the petiole, and in the relatively much shorter inner corona, which consists of a continuous deeply plicate membrane, closely contracted at the mouth around the gynophore. The only specimen in the Kew Herbarium was presented to Sir W. J. Hooker by Mr. Backhouse, who received it from Sir W. Macarthur. It is not localized, and neither Dr. Lindley nor the *Belgique Horticole* gives the precise region whence the plant was introduced. Our figure is from a plant flowered last March in the Temperate House of the Royal Gardens, Kew, grown from seeds presented by Mr. Grant Duff, M.P., Under-Secretary of State for India, and which had been procured from the Melbourne Botanic Gardens by Evelyn Sturt, Esq., who brought them to England.

Descr. A slender glabrous climber. *Branches* terete, of

the thickness of a crow-quill. *Leaves* usually deeply trifid, occasionally 5-lobed, base subcordate or distinctly cordate with a wide sinus; lobes ovate or ovate-elliptical, entire, or the median lobe with a broad obtuse lateral tooth on each side, acute or broadly pointed, glabrous, membranous, one and a half to two and a half inches long and broad. *Petiole* rather shorter than the blade, eglandular, glabrous. *Stipules* subulate. *Flowers* axillary, solitary, widely spreading, scarlet, about two and a half inches in diameter; peduncle one inch more or less, with a few scattered subulate bracteoles. *Sepals* 5, narrowly oblong or linear-oblong, obtuse, one inch long. *Petals* one-third to half as long as sepals, oblong. *Outer corona* of a single series of slender erect filaments. *Inner corona* much shorter than the outer, membranous, deeply plicate, contracted at the mouth, shortly softly villous, like the outer pale yellow or whitish.—(I have not fresh flowers for examination, but Mr. Fitch represents an intermediate series of short filaments in the corona, fig. 1). *Gynophore* exserted, three-quarters of an inch long.—*D. O.*

Fig. 1, Transverse section of corona and base of gynophore:—*enlarged.*

W. Fitch, del et lith

Vincent Brooks, Day & Son, Imp.

Tab. 5912.

MILLA capitata.

Native of California.

Nat. Ord. Liliaceæ.—Tribe Milleæ.

Genus Milla, *Cavanilles ;* (*Kunth. Enum. Plant.*, vol. iv. p. 478).

Milla *capitata ;* bulbo ovideo prolifero tunicato, foliis anguste linearibus elongatis acuminatis, scapo gracili elongato, spathæ valvis pluribus elliptico-lanceolatis violaceis floribus brevioribus, perianthio cærulescenti-violaceo, submarcescenti 6-fido, lobis ovatis obtusis erectis, staminibus inclusis filamentis 3 alternis basi dilatatis complanatis inappendiculatis, 3 utrinque lamina lanceolata antheram superanti instructis, capsula inclusa.

Milla capitata, *Baker in Journ. Linn. Soc.*, vol. xi. p. 381.

Brodiæa capitata, *Benth. Pl. Hartweg.*, p. 339.

Dichelostemma capitata, *Wood in Proc. Acad. Philad.*, 1868, p. 173.

For the opportunity of figuring this charming bulb we are indebted to our excellent correspondent, Max Leichtlin, of Carlsruhe, who transmitted fresh flowering specimens from his garden in May last. It was originally described by Mr. Bentham, in the "Plantæ Hartwegianæ," and has long been known to us in the Herbarium from specimens collected in California by Douglas, Coulter, and others. Mr. Baker, in his valuable Monograph of the Gamophyllous Capsular herbaceous Liliaceæ (*Journ. Linn. Soc.*, vol. xi. p. 349), on the ground of technical convenience, refers our plant to the genus *Milla*, established by Cavanilles for his *M. biflora*, including under *Brodiæa* only triandrous species, in which the alternate stamens are reduced to staminodia. Unfortunately this generically separates species, which in every other respect appear congeneric, while it associates others, which certainly look generically distinct. The alternative, however, seemed

to be to reduce all (*Moriæa*, *Milla*, *Dichelostemma*, *Triteleia*, *Hesperoscordum*, *Calliprora*, and allies) to one genus.

Descr. *Bulb* one half to three quarters inch diameter, ovoid or subglobose, proliferous, sheathed by fibrous scales. *Leaves* usually two from each flowering bulb, elongate, narrowly linear, glabrous, tapering above, one foot long or more, one-eighth to one-sixth inch broad. *Scape* tall and slender, one to two feet or taller, glabrous. *Umbels* several- or many-flowered, compact, about one and a half inches in diameter. *Valves of spathe* several, ovate or elliptic-lanceolate, acute, falling short of the flowers, deep violet. *Pedicels* one fourth to one half the length of the flower. *Perianth* infundibuliform, sexfid, blue-violet, lobes ascending, ovate, obtuse, one half to three-fourths inch long. *Stamens* six, inserted at mouth of tube, alternately rather unequal; three opposite to the three outer segments of perianth with short unappendaged filaments complanate and dilated at base; three opposite to the inner segments with each side of the very short filament adnate to a lanceolate membranous erect scale, which overtops the linear anther. *Ovary* narrowed above and below. *Capsule* many-seeded, included in the marcescent perianth.—*D. O.*

Fig. 1, Flower; 2, same laid open; 3, transverse section of ovary:—*all somewhat enlarged.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5913.

RHYNCHOSIA Chrysocias.

Native of the Cape of Good Hope.

Nat. Ord. Leguminosæ.—Tribe Papilionaceæ.

Genus Rhynchosia, *Lour.*; (*Benth. et Hook. f. Gen. Pl.*, vol. i. p. 542.)—
§ Chrysocias.

Rhynchosia *Chrysocias;* volubilis, ramis pubescentibus tomentosisve, foliis pinnatim 3-foliolatis breviter petiolatis, foliolis oblongo-lanceolatis obtusiusculis supra sparse hirtellis glabratisve subtus pubescentibus v. tomentosis, stipulis ovato-ellipticis obtusis, floribus umbellatis pedunculatis, pedicellis flore æquilongis v. brevioribus, calyce tomentoso-piloso 5-fido (labio superiore bipartito), corolla aureo-flava.

Rhynchosia Chrysocias, *Benth. in Harv. et Sond. Flora Cap.*, vol. ii. p. 248.

Chrysocias grandiflora, *E. Mey. Comm.*, 139.

Glycine erecta, *Thunb. Fl. Capensis*, p. 592 (*fide Harv. l.c.*).

Cylista lancifolia, *Eckl. et Zeyh. Herb.*, No. 1690 (*fide Harv. l.c.*).

It is remarkable that this beautiful climber should not have earned a coloured plate long ago, at a time when Cape plants were more generally and specially cultivated than they are at present. It flowers very copiously in spring, trained up the rafters of a greenhouse. Our figure is from a plant flowered last May in the Royal Gardens, Kew. This species is very nearly allied to *Rhynchosia Leucoscias*, differing technically in the deeper division, into two linear-lanceolate teeth, of the upper lip of the calyx.

Descr. *Branches* flexuose or twining from a woody base, slender, terete, closely pubescent or shrubby tomentose. *Leaves* pinnately trifoliolate, thinly pubescent above, more closely pubescent or tomentose beneath; leaflets oblong-lanceolate, rather obtuse or subacute, entire; one to one and a half inches long, five to eight lines broad; lateral leaflets on

petiolules of one line or less, terminal scarcely or but slightly exceeding the lateral at an interval of one-sixth to one-fourth inch. *Stipules* ovate-elliptical, obtuse or broadly pointed, pubescent or shortly tomentose, one-third inch long. *Peduncles* axillary, varying to about three inches in length, pubescent. *Pedicels* equalling or shorter than the calyx, somewhat glandular-pilose; involucral bracts elliptical, pubescent, ciliate, deciduous. *Flowers* two-thirds to three-fourths of an inch; calyx green, pilose or tomentose; corolla golden yellow. *Calyx* deeply 5-fid, lobes linear-lanceolate, rather obtuse, much exceeding the tube, nearly as long as the corolla, two upper lobes the shortest. *Vexillum* erect, rotundate, emarginate; *alæ* and *carina* subequal, obtuse. "*Legumes* not much larger than the calyx, pilose."—*D. O.*

Fig. 1, Calyx and stamens, the corolla removed; 2, vexillum; 3, carina; 4, one of the alæ, 5, pistil:—*all somewhat enlarged.*

W. Fitch del. et lith.

Vincent Brooks Day & Son Im.

Tab. 5914.

ARISÆMA CONCINNUM.

Native of Sikkim Himalaya.

Nat. Ord. Aroideæ.—§ Arisareæ.

Genus Arisæma, *Martius*; (*Schott. Prod. Syst. Aroid.*, p. 24).

Arisæma *concinnum*; tubere subsphærico superne radiculoso, scapo solitario folio breviore, basi vaginato unifoliato, folio digitatim, 9–11-foliolato, foliolis elongato-ovalibus utrinque attenuatis v. apice caudato-acuminatis, spatha inferne tubulosa fauce aperta lamina longe acuminata decurva longitudinaliter (*masc.*) ex albo et cærulescenti purpureo vel (*fem.*), viridulo striata; spadice subincluso apice truncato vix clavato subcapitato.

Arisæma concinnum, *Schott in Bonplandia*, 1859, vol. xxvii.; *Prod. Syst. Aroid.*, p. 50.

Nearly allied to *Arisæma papillosum*, Schott, figured in the *Botanical Magazine* (Tab. 5496), but a more elegant species, and technically belonging to a different section, marked by the form of the appendix of the spadix, which is clavate in *A. papillosum*, and scarcely thickened upwards in our plant. The spathes, purple and white in the male plant, green and white in the female, are graceful in form and attractive in colour. They expand in spring, our figure being from a specimen which flowered last April in the Royal Gardens, introduced by Mr. Gammie from the Sikkim Himalaya, where this species was discovered by Dr. Hooker in 1848, growing in forests at an elevation of 6–10,000 feet. The colour of the spathe and the spadix of the male plant are taken from a drawing made under the late Mr. Cathcart's superintendence, which has been authenticated by Dr. Schott.

Descr. *Leaf* solitary; petiole erect, one to two feet long, sheathing the scape below, and sheathed at the base by two or three successively longer, membranous, closely

applied scales; leaflets elongate, oval, gradually narrowed to each end, often very finely tapering above, glabrous, membranous, paler beneath, varying to nearly one foot in length, one inch to two and a half inches in breadth. *Scape* considerably shorter than the petiole, erect, glabrous. *Spathe* convolute, tubular below; tube two to three inches long, half to three quarters inch in diameter; lamina slightly recurved at the mouth, gradually narrowed above into a long tapering pendent appendix; the spathe of the male plant striated white and dark blue-purple; of the female white and green longitudinally, paler outside; appendix of spathe varying to nearly six inches in length in the female, shorter in the male. *Spadix* but slightly exserted, appendix hardly thickened above, subcapitate, truncate, not clavate.—*D. O.*

Fig. 1, Entire plant, much reduced; 2, two leaflets and their attachment, with the apex of the peduncle; 3, female, and 7, male inflorescence, enclosed by spathe; 4, spadix of female; 8, of male plant; 5, ovary; 6, same laid open; 9, stamen:—*the analyses magnified.*

W Fitch, del. et lith

Vincent Brooks, Day & Son, Imp

Tab. 5915.

GREVILLEA macrostylis.

Native of West Australia.

Nat. Ord. Proteaceæ.

Genus Grevillea, *R. Br.* (*Endl. Gen. Plant.*, p. 340).—§ *Leiogyne.*

Grevillea *macrostylis;* frutex, ramulis subvelutinis, foliis subsessilibus ovatis basi cuneatis trifidis lobo centrali trilobato, lobulis pungente acutatis supra glabratis subtus sericeis, floribus terminalibus v. axillaribus subumbellatis, perianthii basi dilatati limbo revoluto, stylo longissime exserto glabro.

Grevillea macrostylis, *F. Muell. Frag. Phyt. Austr.*, vol. i. p. 137; *Benth. Fl. Austr.*, vol. v. p. 428.

A valuable addition to our hard-wooded Australian collection, with neat compact habit, and close somewhat rigid foliage; flowers freely at or near the end of nearly every twig in spring and early summer. Our figure is from a specimen flowered last April in the Royal Gardens, Kew, where it was introduced in 1868 from seeds transmitted by our highly valued correspondent, Dr. Ferdinand von Mueller, from the rich Botanical Gardens of Melbourne. It is a native of East Mount Barren, in Western Australia.

Descr. *Branches* terete, closely puberulous. *Leaves* subsessile or very shortly petiolate, ovate, trifid, base cuneate, lobes entire, pungent-pointed or central lobe with a lateral triangular tooth on each side, upper surface early glabrous, at first with minute subdistant appressed hairs, minutely sericeous beneath, one inch to one and a half inches long and broad. *Flowers* fascicled or umbellate, few together, in the

upper axils or terminal and overtopping the leaves; peduncle very short or none; pedicels one-sixth to one-fourth of an inch long, silky. *Perianth* one-half to two-thirds of an inch long, thinly silky-pubescent externally, obtuse or rounded at base, limb revolute. *Style* elongate curved, one and a half inches long more or less.—*D. O.*

Fig. 1, Two flowers detached :—*enlarged.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5916.

PRIMULA japonica.

Native of Japan.

Nat. Ord. Primulaceæ.—Tribe Primuleæ.

Genus Primula, L. (*Endl. Gen. Plant.*, p. 731).

Primula *japonica*; glabra, foliis vix petiolatis obovato-oblongis v. spathulatis argute dentatis v. duplicato-dentatis venosis efarinosis, scapo elato, floribus numerosis verticillatis, involucri bracteis linear-subulatis inappendiculatis integerrimis pedicello multo-brevioribus, calyce ovoideo-campanulato, lobis triangulari-subulatis, tubo intus farinifero æquilongis, corollæ purpureæ tubo calycem longe superante lobis obcordatis, capsula globosa vertice nuda demum irregulariter rupta.

Primula japonica; *A. Gray in Mem. Amer. Acad. Science*, vol. vi. p. 400.

Respecting the discovery of this superb plant, I have been favoured with the following note, by Mr. Fortune; it is dated April 26th, 1871, and states that "it was met with by me, in full flower, in gardens near Yedo, in May, 1861. I saved its seeds at the time, and sent them home to England, but they failed to vegetate. Plants also were lost on the voyage. Since that time I have made many efforts to introduce it into England, but only last year succeeded in getting seeds to vegetate. For these seeds I am indebted to W. Keswick, Esq., of Hong Kong, and Messrs. Walsh, Hall, and Co., of Yokohama, which gentlemen have thus the honour of introducing a very lovely plant into English gardens. It is perfectly hardy in England, and is now, April 26th, in full bloom in Mr. Bull's establishment at Chelsea; there are several varieties, all beautiful, and no doubt we soon shall have many more."

The only previous notice of this plant I can find, is A. Gray's description quoted above, and which was drawn up

from specimens collected near Hakodadi, by Charles Wright, who discovered it in 1855, and which was published in 1859. As a species it is very closely allied to *P. prolifera*, of the Khasia mountains, in East Bengal, discovered by Wallich's collectors, previous to 1830, and which we have collected, but not in flower, inhabiting marshy spots at an elevation of 5000 feet on that range. It is also most closely allied to the yellow flowered *P. imperialis*, Junghuhn (*Cankriena chrysantha* de Vriese), of the mountains of Java (4–9000 feet elevation), and possibly all may prove varieties of one species.

P. japonica has been collected also by Maximovicz, at Yokohama, and by Consul C. P. Hodgson, near Hakodadi. The splendid specimen here figured flowered in Mr. Bull's establishment, at Chelsea, in April of the present year; it bears far more flowers than the indigenous ones.

Descr. Glabrous, without pubescence or powder, or with a very spare sprinkling of atoms on the leaf beneath. *Leaves* subsessile, three to six inches long, one to three inches broad, obovate-oblong or subspathulate, obtuse, finely singly or doubly toothed, convex above, wrinkled and veined. *Scape* one to one and a half feet high, stout, strict, erect, bearing three to six spreading whorls of six to eighteen fine clear purple flowers an inch in diameter. *Pedicel* as long as the flowers. *Calyx-tube* sub-hemispheric, inner surface coated with yellow powder, lobes triangular-subulate. *Corolla-tube* nearly three times as long as the calyx, lobes obcordate. *Style* slender. *Capsule* subglobose, hardly exceeding the calyx-teeth, bursting irregularly into 5 valves.—*J. D. H.*

Fig. 1, Flower, with corolla removed; 2, ovary, style, and stigma:—*all magnified.*

Vincent Brooks Day & Son lith.

TAB. 5917.

ABUTILON DARWINII.

Native of South Brazil.

Nat. Ord. MALVACEÆ.—Tribe MALVEÆ.

Genus ABUTILON, *Gærtn.*; (*Benth. et Hook. f. Gen. Pl.*, vol. i. p. 204).

ABUTILON *Darwinii*; frutescens, molliter velutino-tomentosum, foliis petiolatis basi cordatis 5-9-nerviis, inferioribus late palmatim 5-fidis superioribus 3-fidis supremis integris ovatis, lobis triangularibus acuminatis crenulatis v. denticulatis, floribus in axillis solitariis v. 2-3-nis gracile pedunculatis nutantibus subsanguineo aurantiacis, nervis saturatioribus, calycis tomentosi tubo hemispherico, lobis triangulari-ovatis acuminatis enerviis petalis obovato-orbiculatis subdimidio brevioribus, carpellis numerosis (15—20) vesicularibus.

I received flowering specimens of this plant from my friend Mr. Darwin, in April last, with the information that he had raised it from seed transmitted by the learned German zoologist, Fritz Mueller, of Itzigahy, in St. Catherines, S. Brazil, and that it forms a large, erect, handsome bush, loaded with flowers, and is very ornamental; also that it possesses the peculiarity of being, during the early part of its flowering season, absolutely sterile with its own pollen but fertile with the pollen of any other individual (of the same species); whilst later in the season it is capable of self-fertilization.

Referring to the Herbaria, I find beautiful dried specimens communicated by Dr. Fritz Mueller in 1869, with flowers fully two and a half inches diameter, (much larger than in the cultivated plant), and others gathered at a long antecedent date, namely, in 1836, by Tweedie, who found it in shady woods at the summit of St. Joveir. Dr. Mueller's specimens are labelled as from Capivari, a locality presumably in the

province of St. Catherines, where Dr. Mueller resides, though the only place of that name which I find in the maps is in the province of Rio de Janeiro, and E.N.E. of the capital. Where St. Joveir (as I read it, for Tweedie's writing and spelling are equally bad) is I cannot tell,—the only place of that name I find is in Bolivia, far from the scene of Mr. Tweedie's travels, which extended over an immense tract of country chiefly to the southward and westward of Brazil proper, extending into Tucuman, Banda Oriental, &c.

It is with hesitation that I have advanced this as a new species of a genus already numbering some seventy to eighty species, many of them Brazilian. Its allies are *A. Bedfordianum*, Hook. (Tab. Nost. 3892), *A. virens*, St. Hil., and *A. pictum* (Tab. Nost. 3840), which all differ abundantly.

Descr. A large, branching shrub, copiously covered with dense short velvety tomentum. *Branches* terete, slender. *Leaves* petioled, four to six inches long, by two to four broad, all deeply cordate at the base, the lower broad and palmately 5- to 7-lobed to near the middle, the upper 3-lobed, the uppermost entire and ovate-cordate; lobes of all triangular, ovate, acute, minutely toothed and crenate; nerves three to nine, palmately spreading from the top of the petiole, which is one and a half to two inches long, slender and terete. *Flowers* one to three in the axils of many of the leaves, one and a half to two and a half inches in diameter, broadly campanulate, drooping, dark orange-red, with blood-red veins and bases of the petals; peduncles slender, one half to one inch long. *Calyx* densely velvety-pubescent, tube hemispheric, lobes triangular-ovate, acuminate, quite entire, about one-third as long as the petals. *Petals* orbicular-obovate, concave. *Stamens* very numerous, column of anthers oblong, dark orange-red. *Carpels* numerous, ten or more, hairy; styles filiform, stigmas capitate. *Fruit* vesicular, small (ripe not seen).—*J. D. H.*

Fig. 1, Ovary, style, and stigmas:—*magnified*.

W Fitch. del et lith

Vincent Brooks Day & Son, Imp

Tab. 5918.

DENDROBIUM BARBATULUM.

Native of Western India.

Nat. Ord. Orchidaceæ.—Tribe Malaxideæ.—§ Dendrobieæ.

Genus Dendrobium, *Swartz*; (*Lindl. Gen. et Sp. Orchid.*, p. 74).

Dendrobium *barbatulum*; caulibus pedalibus juniorbus undique foliosis cito aphyllis teretibus basi modice incrassatis simpliciusculis, foliis anguste lanceolatis membranaceis, racemis lateralibus laxifloris strictis v. curvis pedicello rachique gracillimis, floribus secundis lacteis, sepalis ellipticis acutis petalis lanceolatis latioribus, labelli lobis lateralibus parvis subacutis intermedio obovato-spathulato apice integerrimo subacuto, calcare viridi longiusculo.

Dendrobium barbatulum, *Lindl. in Wall. Cat.* No. 2013; *Gen. et Sp. Orchid.*, 84. *Lindl. and Paxt. Fl. Gard.* vol. iii. p. 113, *cum ic. xylog. non Wight. Ic. Pl. Ind.* t. 910, *quæ D. chlorops; nec hujus operis* t. 5444, *quæ D. Fytcheanum*).

This is a species which, though discovered as long ago as the beginning of this century, and published by Lindley about 1830, has since been misunderstood, partly because Wight figured another and closely allied species (*D. chlorops*) for it; and still later a third plant, a Moulmein one (*D. Fytcheanum*, Batem.), has been figured as *D. barbatulum* in this magazine (Tab. 5444). As it is, the true *D. barbatulum* may be known from *D. chlorops* by its larger pure white flowers, with more elliptic acuminate sepals, and much narrower petals; and from *D. Fytcheanum* by the sepals not being orbicular, by the totally different lip, and colourless column, as also by the swollen base of the stems. A much closer ally is the *D. Heyneanum* (Lindl. in Wall. Cat., n. 1995, et Gen. et Sp. Orchid., p. 90; Wight. Ic. t. 909); but this is a very much more slender plant, with smaller flowers, and other differences.

August 1st, 1871.

D. barbatulum is, however, a very variable plant, as a comparison of our figures 3, 4, and 5 shows ; and other forms are no doubt forthcoming. The Royal gardens are indebted to Mr. Woodrow, the able Curator of the Poona Botanic Gardens, for plants of the true *D. barbatulum*, which flowered in March of the present year. It is a native of forests in the Concan and other mountains in the Western Peninsula of India, whence there are specimens in the Hookerian Herbarium from Heyne, Wight, Gibson, Law, Stocks, and Dalzell. It has long been in cultivation in England, and is well figured by Lindley in *Paxton's Magazine*, as far as the woodcut is concerned.

Descr. *Stems* tufted, curved, suberect, rather stiff, about a foot long, terete from a swollen base, gradually tapering to a point ; joints about an inch apart, clothed with membranous sheaths. *Leaves* on the young shoots only, three to four inches long, by one-half to two-thirds of an inch broad, narrowly lanceolate, acuminate, membranous, deciduous. *Racemes* lateral, together with the graceful, almost filiform, slightly-curved peduncles four to ten inches long, many-flowered. *Flowers* secund, almost pure white, with a green spur ; buds pale green, narrow, acuminate ; perianth spreading, one and a quarter to one and a half inches in diameter ; pedicels one-quarter to one-half of an inch, slender. *Sepals* elliptic, acuminate or subobtuse. *Petals* much narrower, gradually narrowed from the base to the acuminate or obtuse tip. *Lip* about as large as the sepal ; lateral lobes very small, ascending, acute, striated with pink ; mid-lobe large, obovate-spathulate, acute, or obtuse, with an obscure yellow villous spot at the very base, a short raised mesian ridge. *Spur* conical, straight, subacute, about half as long as the sepals. *Column* very short indeed. *Anther* hemispherical.—*J. D. H.*

Fig. 1, Column base of lip and spur ; 2, lip ; 3, 4, and 5, varieties in the form of the flower :—*all but* 4 *and* 5 *magnified.*

W Fitch, del et lith

Vincent Brooks Day & Son, Imp

Tab. 5919.

GREVILLEA intricata.

Native of Western Australia.

Nat. Ord. Proteaceæ.—Tribe Grevilleæ.

Genus Grevillea, *R. Br.*; (*Benth. Fl. Austral.*, vol. iv. p. 417).

Grevillea *intricata*; fruticosa, ramulis gracilibus, novellis floribusque sparse sericeis ceterum glaberrima, foliis elongatis gracilibus bis terve 3-natim divisis, segmentis remotis divaricatis lineari-subulatis v. filiformibus teretiusculis rigidis acutis sulcatis, racemis terminalibus et lateralibus gracile pedunculatis, pedicellis filiformibus, perianthio gracili revoluto, limbo (inaperto) globoso, toro recto eglanduloso, stylo recto, stigmate conico.

Grevillea intricata, *Meissn. in Hook. Kew Journ. Bot.*, vol. vii. p. 74; *et in DC. Prod.* vol. xiv. p. 387. *Benth. Fl. Austral.* vol. iv. p. 481.

A very slender plant, native of the warmer parts of South-Western Australia, at the Murchison river and Champion Bay, where it was discovered in 1855 by T. Drummond, and found later by Messrs. Oldfield and Burges; the former of whom describes it as a bushy white-flowered shrub, six to ten feet high, growing in rocky places. In its wiry habit, curious foliage, small flowers, and pale colour, it little resembles the species of *Grevillea* in ordinary cultivation, and affords a conspicuous instance of those great differences in habit, and those variations in foliage and inflorescence, &c., that all the large Australian genera present. The hooked tips of the young leaf-segments, which spread like bird's-claws, would suggest that this plant was a climber; and though there is no evidence of this, it is quite conceivable that, under special circumstances, it might become so, since, though described as a rigid, erect shrub in its dry, rocky, native soil, it assumes a lax growth, with pendulous branches,

in the damper, cooler atmosphere of the Temperate House at Kew.

Grevillea intricata was introduced into the Royal Gardens by seed received from Mr. Burges, which flowered in May of the present year.

Descr. An erect, rigid, much-branched, glabrous shrub, six to ten feet high, becoming lax, with pendulous branchlets in a cool damp greenhouse; branches terete; branchlets, young shoots, and inflorescence sparingly silky. *Leaves* spreading, four to six inches long, consisting of a slender, rigid, wiry petiole and rachis, with two to four pairs of distant, rigid, wiry, twice or thrice 3-chotomously-forked segments, that stand at right angles to one another; segments terete, pungent, grooved on the upper surface, young hooked at the tip. *Racemes* one to two inches long; axillary and terminal, dense, conical or ovoid, many-flowered, erect from curved ascending slender peduncles, white, with pale lemon-coloured buds, pedicels solitary or in pairs, one-sixth to one-fourth of an inch long, slender. *Flowers* small, one-sixth of an inch long. *Perianth* glabrous, strongly revolute, the closed tips of the lobes forming in small spheres. *Style* stout, nearly straight, swollen below the middle; stigma ovoid, angled, obtuse. *Capsule* shortly stipitate, one-half to three-quarters of an inch long, obliquely obovoid, woody, brown, smooth, somewhat rugose when old.—*J. D. H.*

Fig. 1, Tip of leaf; 2, a pair of flowers:—*both magnified;* 3, fruit, of the *natural size.*

Vincent Brooks, Day & Son

Tab. 5920.

DARLINGTONIA Californica.

Native of California.

Nat. Ord. Sarraceniaceæ.

Genus Darlingtonia, *Torr.*; (*Benth. and Hook. f., Gen. Pl.*, vol. i. p. 148).

Darlingtonia *Californica.*

Darlingtonia Californica, *Torvey in Smithsonian Contributions*, vol. vi. p. 4, t. 12; *Walp. Ann.*, vol. iv. p. 169; *Flore des Serres*, vol. xiv. tt. 1440. 1441; *Belgique Horticole*, vol. v. t. 18.

The following information regarding this most singular plant, which has been flowered by Messrs. Veitch in April of the present year, is compiled from a letter addressed to us by Mr. W. Robinson (who visited its native country in October, 1870), and to whom the Royal Gardens are indebted for fine specimens. It is published in the "Gardener's Chronicle" for January 14th, 1871.

The *Darlingtonia* grows in spongy sphagnum bogs, with Rushes and Sundew, on the Sierra Nevada of California, at five thousand feet above the sea, where the pitchers resemble a cluster of Jargonelle pears, ten to twenty-four inches high, surrounding flowering stems of three to three and a half feet high, which at the fruiting season bore capsules as large as walnuts. The top of the pitcher is turned over, forming a dome, which together with the whole upper part of the leaf, is of a ripe-pear yellow colour. All the pitchers are spirally twisted, especially above, and contain at the bottom two to three inches depth of closely-packed insects, of all sizes, from little beetles to large moths. By what means the pitcher attracts these insects is not clear; but it is easy to see how it disposes of them when enticed inside. Its inner surface is smooth for a short way down, when isolated hairs appear; and, lower down, the whole chamber is lined with sharp slender transparent rigid needle-like hairs, directed downwards at an acute angle. Towards the base of

the pitcher the hairs converge, and the insects, which are at first guided downwards by the direction of these hairs, finally become entangled by their converging points, and struggling to escape, are killed by mutual pressure or confinement, or perhaps by drowning in the putrid mass.

In a younger state than that described above the leaves are singular objects, from the tessellated dark-green markings on the polished upper part of the pitcher, and the pendulous lobe with two diverging flaps, that hangs down from its aperture; most likely this singular flap plays an important part, as an insect trap, or decoy, in the economy of the plant.

Descr. *Rootstalk* horizontal. *Leaves* tufted, ten to twenty-four inches high, spirally twisted above, forming long narrow curved conical pitchers, one to one and a half inches diameter at the top below the mouth, the summit of which is inflated and turned over, leaving a very narrow curved aperture directed upwards. The surface of the pitcher is veined; a narrow wing runs down its ventral surface, and another along the crest of the top, whilst a bifid, dull-red, pendulous appendage, with oblong obtuse lobes, hangs down in front of the aperture; these lobes divaricate in young leaves, but are pendulous in old ones. *Scape* strict, erect, six to eighteen inches high when in flower, clothed with linear-oblong, obtuse, erect, concave, green, half-amplexicaul bracts. *Flower* solitary, pendulous, three inches diameter. *Sepals* 5, linear-oblong, spreading, concave, pale green. *Petals* much shorter than the sepals, converging, one to one and a quarter inches long, yellow-green, with dark red-brown broad veins, linear-oblong, concave, contracted above the middle, and again dilated into a smaller terminal, obtusely concave appendage. *Stamens* 1-seriate, numerous, hypogynous; filaments short, anthers linear-oblong. *Ovary* subcylindric below, dilated into a broad orbicular 5-lobed top, which is deeply depressed in the centre, 5-celled; style stout, short, in the centre of the depression; stigmas 5, radiating, stout, tips papillose; ovules very many and minute, on large axile spongy 2-lobed placentas. *Seeds* obovate-clavate; testa membranous, with squarrose setæ; albumen granular and floury; embryo small basal, cotyledons very short, radicle cylindric.—*J. D. H.*

Fig. 1, Petal; 2, stamen and pistil; 3, transverse section of ovary:—*all magnified.*

W Fitch del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5921.

ERANTHEMUM CINNABARINUM, VAR. OCELLATUM.

Native of Moulmein.

Nat. Ord. Acanthaceæ.—Tribe Eranthemeæ.

Genus Eranthemum; *L.* (*Nees in A. DC. Prod.* vol. ii. p. 445.)

Eranthemum *cinnabarinum*; glabrum v. minute puberulum, ramulis teretibus, foliis petiolatis ovatis v. oblongo-lanceolatis subcaudato-acuminatis, racemis terminalibus basi compositis recurvato-patentibus multifloris, floribus fasciculatis subsessilibus secundis, bracteis filiformibus, calycis segmentis subulatis, corolla coccinea, tubo gracili calyce multoties longiore, limbi explanati lobis 2 superioribus minoribus oblongis obtusis, lateralibus oblongo-rotundatis, inferiore orbiculato, antheris cæruleis.

Eranthemum cinnabarinum, *Nees in Wall. Plant. As. Rar.*, vol. i. p. 20, t. 21; *et in A. DC. Prod.*, vol. ii. p. 453.

Var. *ocellata*, foliis maculatis, maculis irregulariter orbiculatis oblongisve stramineis roseo-ocellatis.

A native of Martaban, where it was discovered in 1827 by Wallich, at the foot of the hills at Trogla, and figured in his magnificent "Plantæ Asiaticæ Rariores." Nothing further was known of it till, some forty years later, it was discovered by the Rev. Mr. Parish, on an expedition to Na-Toung, in Birma. From that gentleman seeds have been received at Kew, produced by plants grown in his garden at Moulmein, and it is to the produce of these that the accompanying plate is due. The curious ocellate blotching of the leaf does not occur in the original specimens of Wallich and Parish, and is no doubt a deformity; it may find favour in the eyes of many horticulturists, but, to my eye, such discolorations too much resemble eruptive skin-diseases to be objects of admiration; they are not of the same nature as the ornamentation of *Anæctochilus* leaves, or the spots and bands on the

foliage of the Indian *Cypripedia*, or of *Episcia Chontalensis*, figured in this number, which are consistent with healthy action of the cuticle and tissues of the leaf.

Descr. A tall slender undershrub, sometimes six feet high, of slender habit, with large deep-green smooth spreading leaves (blotched in the form here figured). *Branches* cylindric, slender, green, slightly tumid at the nodes. *Leaves* four to ten inches long, elliptic- or oblong-lanceolate, long acuminate, entire or obscurely crenulate, minutely puberulous on both surfaces, deep-green above, paler beneath; petioles one and a half to three inches long, slender. *Racemes* terminal, naked, spreading and secund, compound at the base, four to eight inches long; rachis terete, pubescent, slender. *Flowers* fascicled at intervals, subsessile; bracts filiform, equalling the calyx. *Calyx* one-third inch long, puberulous, segments subulate. *Corolla* tube one inch long, three to four times as long as the calyx, pale red; limb one and a quarter inches in diameter, deep vivid red, with a small white eye and darker blotch at the base of the lower lobe; two upper lobes smaller, oblong, rounded; two lateral larger than the upper; lower lobe orbicular, rather larger than the others. *Anthers* exserted, blue. *Ovary* puberulous; style capillary, stigma notched.—*J. D. H.*

Fig. 1, Calyx, style, and stigma; 2, ovary and disk:—*both magnified.*

W. Pitcher, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5922.

CYPRIPEDIUM NIVEUM.

Native of the Malayan Archipelago.

Nat. Ord. Orchideæ.—Tribe Cypripedieæ.

Genus Cypripedium; L. (*Endl. Gen. Pl.*, vol. i. p. 220).

Cypripedium *niveum;* acaule, foliis 4-6 patentibus distichis oblongis acutis v. emarginatis basi arcte imbricatis canaliculatis supra luride viridibus albo-maculatis una cum scapo unifloro et ovario pubescente luride purpureis, bracteis parvis ovario elongato multoties brevioribus, floribus candidis, sepalo postico suborbiculato acuto, lateralibus in unum ovatum emarginatum superiore multoties minus connatis, petalis late oblongis patentibus apice rotundatis punctis sanguineis conspersis, labello saccato parvo subsessili ovoideo ore contracto, staminodio transverse oblongo apiculato.

Cypripedium niveum, *H. Reichenbach in Gard. Chron.* 1869, p. 1038.

This very singular plant was originally described by Professor H. Reichenbach in the *Gardener's Chronicle*, who correctly points out its affinity with the Burmese *C. concolor* (Tab. Nost. 5513), whilst keeping it distinct, an opinion in which I entirely concur. Wide as are the limits of variation in *Orchideæ*, these less concern the *Cypripedia* than many other genera, and in this case the points of discrepancy between *C. niveum* and *concolor* affect many parts of the structure;—thus in *C. niveum* the bracts are much smaller and of a different form; the ovary is longer; the upper or dorsal sepal far broader; the lateral sepals are combined into one remarkably small notched blade, not one-fourth the size of the upper sepal; the petals are considerably broader; the lip much smaller, of a wholly different shape, with a contracted instead of an expanded mouth; and the staminode is broader than long;—to these structural differences must

be added the long slender scape, different coloration of the leaves, which are spotted with oblong white blotches, whose axis is parallel to the length of the leaf; and lastly the striking difference in the colour of the flowers.

C. niveum is a native of the Tambelan Islands, a small group midway between Singapore and the coast of Borneo; whence, Mr. Bull informs me, he first imported it in 1870; adding, that he had since received it from the West Coast of Siam. The beautiful specimen here figured flowered in his nursery in June of the present year.

Descr. Stemless; leaves beneath, scape, and ovary of a dark lurid purple colour. *Leaves* coriaceous, four to six inches long, distichous, bases closely imbricating, acute or notched at the tip, keeled, dark dull green above, with oblong greenish-white spots. *Scapes* several, six inches high, strict, slender; bracts two, sheathing the base of the ovary, one-half to three-quarters of an inch long, oblong, obtuse, purple with yellow edges. *Ovary* two inches long, slender, pubescent. *Flowers* three to three and a half inches in diameter, snow-white. *Dorsal sepal* orbicular, cuspidate, streaked with scarlet at the back; two lateral combined into one ovate notched blade placed under the lip and smaller than it. *Petals* spreading, slightly deflexed, broadly oblong, rounded at the tip, distinctly spotted with red-purple from the base to the middle. *Lip* one inch long, pure white, exactly ovoid, with a contracted mouth. *Staminode* transversely oblong, apiculate, white, with an irregular yellow disk.—*J. D. H.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5923.

UTRICULARIA MONTANA.

Native of the West Indies.

Nat. Ord. Lentibulariæ.

Genus Utricularia; Linn. (*A. DC. Prod.*, vol. viii. p. 3.)

Utricularia (Orchidioides) *montana;* radicibus e tuberibus oblongis pedicellatis fibrillisque filiformibus, foliis radicalibus petiolatis lanceolatis acutis 3-nerviis nervis secundariis paucis, scapo erecto 1-5-flore bracteato, bracteis linearibus remotis, floribus amplis cernuis pedicellatis, sepalis ovato-cordatis obtusis, corollæ labiis amplis planiusculis undulatis, superiore orbiculato basi truncato, marginibus recurvis, inferiore duplo majore transverse oblongo, palato prominente genitalia occludente calcare robusto incurvo labio breviore.

Utricularia montana, *Jacq. Amer.*, vol. vii. 6; *Poiret, Encycl.*, vol. viii. p. 268; *A. DC. Prod.*, vol. viii. p. 23; *Griseb. Flor. Brit. W. Indies*, p. 390.

Utricularia alpina, *Linn. Sp. Pl.*, 25; *Vahl. Enum.*, vol. i. p. 194 (*Excl. Syn.*); *Hook. Exot. Fl.*, t. 198.

Utricularia grandiflora, *Pers. Synops.*, vol. i. p. 18.

Utricularia uniflora, *Ruiz. and Pav. Fl. Peruv.*, vol. i. p. 20, t. 31, f. 6.

To many who have seen this singular plant for the first time in cultivation, it will be a matter of surprise to be informed that it is a member of the same genus as the Bladderworts of our ponds; and departs from the habits of most of its congeners chiefly in being terrestrial, developing hollow tubers on the fibrils of its roots, at the base of its stem, and minute imperfect bladders. The occurrence of these bladders is a singular instance of the presence of organs, typical of its family, in a member of it that can make no use of them. *U. montana* is an epiphyte, growing on wet mossy trunks of trees in the mountains of the West Indian Islands, where it has been detected in Montserrat, Dominica, St. Vincent,

Grenada, and Trinidad, of the British Islands. It also inhabits Martinique; and on the Main the Isthmus of Darien, Venezuela, Guiana, New Grenada, and Peru, advancing in the latter country to Huanuco in 10 degrees South. It is curious that a plant spread over so wide an area should not hitherto have been found in Jamaica.

The Royal Gardens are indebted for this singular plant to Mr. Ortgies of Zurich, who received it with a collection of Orchids from the Spanish Main. It flowered in a tropical stove in July of the present year.

Descr. *Roots* of ovoid stalked hollow green tubers, one-third to half an inch long, which are formed on filiform, wiry, tortuous fibrils, that also bear at intervals, beyond the tubers, minute deformed transparent utricles. *Leaves* four to six inches long, erect, elliptic-lanceolate, obtuse or acute, narrowed into slender petioles, dark-green on both surfaces, smooth, 3-nerved; lateral nerves faint, joined to the central by faint oblique venules; petiole terete, jointed above the base. *Scape* much longer than the leaves, erect, slender, wiry, terete, with one or several erect linear bracts. *Flowers* one to four; very large, one and a half inches in diameter, drooping; pedicels one-half to three-quarters of an inch long; with a small obtuse bract at the base. *Calyx-lobes* pale green, ovate-cordate, obtuse. *Corolla* white, with a yellow palate and disk to the lower lip; upper lip one inch in diameter, orbicular, with a truncate base, horizontal, with recurved edges; lower lip transversely oblong, twice as large as the upper, palate high and very prominent, closing the throat; spur a stout horn, shorter than the limb, incurved. *Stamens* with clavate filaments, and vertical, two-celled anthers. *Seeds* fusiform.—*J. D. H.*

Fig. 1, Lower sepal and upper lip; 2, lower lip and spur; 3, ovary and stamen:—*all magnified.*

3.

2

1.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son Imp.

Tab. 5924.

SEDUM GLANDULOSUM.

Native of Sardinia.

Nat. Ord. Crassulaceæ.

Genus Sedum, *L.*; (*Benth. et Hook. f. Gen. Pl.*, vol. i. p. 659).

Sedum *glandulosum*; annuum, humile, glanduloso-pubescens, foliis erecto-patentibus sparsis lineari-oblongis obtusis cylindricis facie obscure complanatis, floribus breviter pedicellatis axillaribus et in cymas breves simplices v. bifidas dispositis purpurascentibus, sepalis late ovatis subacutis, petalis ellipticis acutis, filamentis gracilibus, antheris purpureis, carpellis turgidis, erectis.

Sedum glandulosum, *Moris Stirp. Sard.*, El. i. p. 20; *Flor. Sard.*, vol. iv. p. 121, t. 73, f. 3; *Bertoloni Fl. Ital.*, vol. iv. p. 717.

It is partly in the hope of reviving a taste for the cultivation of a class of plants that were highly deserved favourites with our grandfathers, that the *Botanical Magazine* devotes an occasional plate to such a neglected group as the smaller European succulents,—a taste that is being most commendably and energetically encouraged by Mr. W. Robinson, whose works on the cultivation of rock, alpine, and hardy plants have given a new direction to the energies of those lovers of horticulture who have little time, space, or means for gardening. Such plants possess all the attractions of variety, beauty of form, brightness of colour, rarity (if that be one), and curious structure, and afford far more real gratification to the cultivated amateur and intellectual gardener, than can gaudy carpets and hearth-rugs of Geraniums, Calceolarias, and Verbenas scattered over grass lawns, and gay only for a few weeks of the year.

Sedum glandulosum forms a beautiful object in a pot, is of easy cultivation, and seeds freely; it is a very rare and little

known species, a native of the mountains of Sardinia, to which it was long assumed to be confined. The specimens here figured were, however, supposed to be raised from seeds gathered by G. Maw, Esq., in the Escorial in Spain (as he believes), and kindly communicated by him to the Royal Gardens, where they produced plants that flowered in June last, and were named by Mr. Baker. I state that this is Mr. Maw's impression regarding the origin of this plant; but knowing, as I do, the danger there is of the seeds of annuals becoming mixed, there may be room for doubt. Unfortunately my friend is now on a horticultural tour in the Pyrenees, so that I cannot refer my suspicions to him.

Descr. Whole plant covered with minute gland-tipped hairs. *Root* annual, of slender fibres. *Stems* two to six inches high or long, suberect, decumbent or ascending, simple or forked. *Leaves* scattered, sessile, one-third to two-thirds of an inch long, linear-oblong, obtuse, cylindric, rather contracted upwards; base quite simple. *Flowers* one-third of an inch in diameter; usually alternate on short recurved simple or forked terminal cymes, pale-red purple; pedicels slender, about as long as the flower. *Sepals* broadly ovate, subacute. *Petals* twice or thrice as long as the calyx, elliptic, acute, keeled. *Stamens* rather shorter than the petals; filaments slender; anthers minute, purple. *Carpels* erect; many seeded; style slender, one-twelfth of an inch long; stigma minute. *Seeds* oblong, smooth, striate.—*J. D. H.*

Fig. 1, Leaf; 2, flower; 3, ditto, with the petals and stamens removed:—*all magnified.*

W. Fitch del. et lith.

Vincent Brooks Day & Son Imp.

Tab. 5925.

EPISCIA chontalensis.

Native of Central America.

Nat. Ord. Gesneriaceæ.—Tribe Besleriæ.

Genus Episcia, *Mart.*; (*Hanstein in Linnæa*, vol. xxxiv. p. 246).

Episcia *chontalensis*; molliter hirsuta, caule suberecto robusto, foliis oblongo- v. elliptico-ovatis utrinque obtusis crenatis convexis nervis impressis supra læte viridibus late purpureo limbatis, floribus axillaribus solitariis v. geminis, pedicellis petiolo subæquilongis, calycis lobis spathulatis recurvis, corolla deflexa pallide lilacina tubo hirsuto anguste infundibulari basi gibbo deorsum protruso, limbi plani obliqui lobis rotundatis margine crispato-dentatis.

Cyrtodeira chontalensis, *Seemann in Gard. Chron.*, 1867, p. 655; *Flore des Serres*, vol. xviii. p. 165, t. 1924.

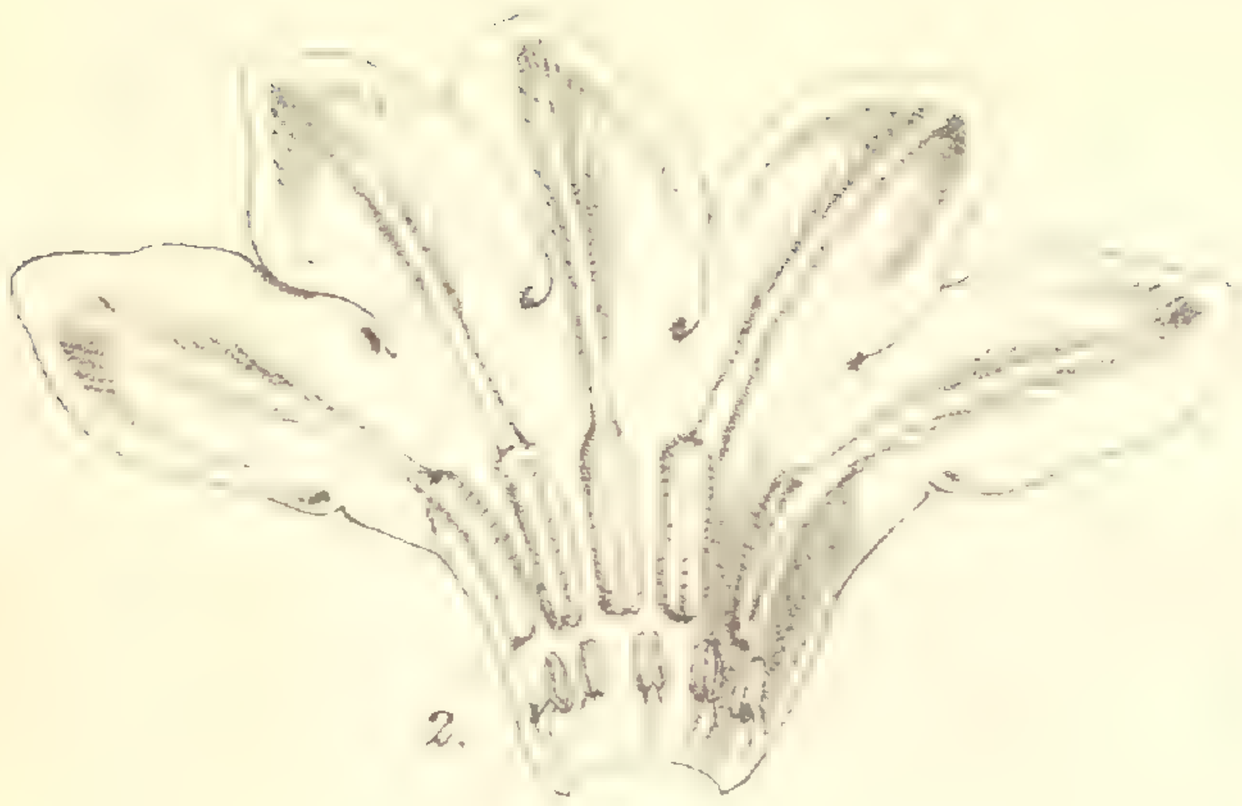
A beautiful plant, first described by its introducer, Dr. Seemann, in the *Gardener's Chronicle*, as a species of *Cyrtodeira*, one of Hanstein's many genera, established in 1853 (Linnæa, vol. xxvi. p. 206) amongst the *Besleriæ*; and which he had the wisdom and candour to abandon in 1865 (Linnæa, vol. xxiv. p. 233), referring the species of *Cyrtodeira* to Martius's genus *Episcia*. Under this view, which is, I think, a correct one, *Episcia* consists of the *Besleriæ* with a prominent gland at the base of the ovary, straight short anther cells, free calyx segments, and a rather narrow tube to the corolla. It thus includes, besides other plants, *Centrosolenia glabra* (Tab. nost. 4552), *C. bractescens* (Tab. nost. 4675), *Drymonia punctata* (Tab. nost. 4089), and *Achimenes cupreata* (Tab. nost. 4312), to which latter, a native of New Grenada, the *E. chontalensis* is most closely allied. All are natives of tropical America, and chiefly of countries between Mexico, Venezuela, and New Grenada.

September 1st, 1871.

Episcia chontalensis is a brilliantly coloured herbaceous plant, a native of the Chontales region of Nicaragua, where it was found in shady groves by the bank of a rivulet, near the Javali gold mine. It was procured for Mr. Bull, of Chelsea, to whom the Royal Gardens are indebted for a specimen, which flowered profusely in June of the present year, shortly after the accompanying drawing had been made from one of Mr. Bull's plants.

Descr. A succulent, softly hirsute, herbaceous plant. *Stems* stout, terete, decumbent or ascending, dark red-purple, six to ten inches long. *Leaves* opposite and irregularly whorled, petioled, three to four inches long, oblong-ovate or elliptic-oblong, crenate-serrate, obtuse, base rounded or subcordate, very convex on either side of the depressed midrib, and between the much-sunk veins; margins recurved; upper surface reticulated, bright emerald-green in the centre, with a broad dark purple limb, the purple advancing towards the midrib between the veins, under surface pale with prominent veins. *Flowers* solitary and geminate; pedicels equalling the petioles, hirsute. *Calyx* small, green or red, segments linear-spatheolate, recurved, entire or toothed towards the tip. *Corolla* very pale lilac, deflexed; tube one inch long, slightly upcurved, with a prominent rounded sac projecting backwards beyond the calyx; limb flat, oblique, one and a half to two inches in diameter, lobes orbicular with toothed margins. *Stamens* included. *Ovary* minute, with an erect dorsal hypogynous gland. *Style* filiform, stigma 2-lipped, included.—*J. D. H.*

Fig. 1, Calyx, style, and stigma; 2, ovary and hypogynous gland:—*both magnified.*



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W Fitch del et lith

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Tab. 5926.

LITHOSPERMUM Gastoni.

Native of the Pyrenees.

Nat. Ord. Boragineæ.—Tribe Lithospermeæ.

Genus Lithospermum, *L.*; (*A. DC., Prod. Syst. Veg.*, vol. x. p. 73).

Lithospermum *Gastoni*; sparse et subadpresse pilosum, caule herbaceo e basi ramoso, ramis erectis rigidulis, foliis sessilibus confertis ovatis ovato-lanceolatisve sensim acuminatis basi obtusis subtus glabriusculis, floribus paucis axillaribus solitariis, lobis calycis lanceolatis extus villosulis pedicello glabriusculo duplo longioribus, corolla extus velutina, tubo gracili longitudine calycis lobis triplo brevioribus.

Lithospermum Gastoni, *Benth. in A. DC. Prod.*, vol. x. p. 83; *Gren. et Godr. Fl. de France*, vol. ii. p. 519.

One of the rarest of European plants, confined to a few spots in the Pyrenees, where it was gathered by Mr. Bentham and Pastor P. Gaston in 1839, growing in clefts of almost inaccessible rocks, above Eaux-Bonnes, at the Pic de Gers; since which period it has been collected in the Pic d'Anie and Col de Tartes, all in the Basses Pyrenees. It is a singularly beautiful plant, with much larger though not more brilliant flowers than the common *L. purpuro-caeruleum*, to which it is closely allied. The specimen here figured was imported by Mr. Backhouse, and flowered in his Nurseries at York, in May of the present year.

Descr. A short dwarf leafy perennial, covered with minute appressed hairs. *Stem* branched from the base; branches erect, simple, four to ten inches high, densely leafy. *Leaves* one to three inches long, spreading and recurved, ovate-lanceolate, tapering to a fine point, sessile, base rounded, keeled, bright green, paler and almost glabrous beneath. *Flowers* few, axillary, crowded towards the tips of the branches

into a short leafy corymb that does not elongate in fruit, overtopped by the leaves, two-thirds of an inch in diameter; pedicels almost equalling the calyx, angular, thickened at the top. *Calyx* velvety, short; segments lanceolate, acute, lengthening a little in fruit. *Corolla* deep-blue, with a white eye, and white or pale purplish raised pubescent bands down the centre of each segment; tube short; lobes broadly ovate, mouth pubescent, throat with five broad pubescent lines. *Stamens* small, inserted in the lower part of the tube; anthers elliptic, apiculate. *Ovary* depressed, 4-lobed. *Style* very short; stigma 4-lobed, included. *Ripe fruit* of yellowish shining subglobose nuts, acuminate, irregularly covered with little pits.—*J. D. H.*

Fig. 1, Flower; 2, corolla laid open; 3, ovary:—*all magnified.*

W. Fitch del et lith

Vincent Brooks Day & Son, Imp

Tab. 5927.

BOMAREA CHONTALENSIS.

Native of Nicaragua.

Nat. Ord. Amaryllideæ.—Tribe Alstrœmerieæ.

Genus Bomarea, *Mirbel*; (*Herbert Amaryllid.*, p. 109).

Bomarea *chontalensis*; caule volubili cylindrico velutino, foliis sparsis summis subverticillatis lanceolatis ellipticisve acuminatis glabris subtus glaucis, umbellis pubescentibus, pedunculis elongatis, floribus numerosis laxe racemosis pendulis, perianthii æqualis foliolis 3 exterioribus obovatis obtusis roseis, 3 interioribus spathulatis integerrimis pallidis **brunneo maculatis, ovario triangulari.**

Bomarea chontalensis, *Seemann in Gard. Chron.* 1871, p. 479.

A native of the margins of woods in the Chontales mountains of Nicaragua, where it was discovered by its describer, at elevations of 2000 to 2500 feet above the sea, and whence roots were sent to Mr. Bull's establishment at Chelsea, where the plant flowered in August of the present year. As a species it is closely allied to *B. edulis*, Tussac (*Alstrœmeria Salsilla*, Tab. nost. 1613, not of Feuillet), a native of St. Domingo, the tubers at the end of the root-fibres of which are boiled and eaten as potatoes, under the name of Topinambours blancs: that plant has however fewer and less brightly-coloured flowers, and its inner perianth-segments are spotted with green; the size of the flower is the same in both.

B. chontalensis is a very handsome stove climber, and is no doubt easily cultivated, and increased by the removal of the tubers at the proper season.

Descr. *Stem* several feet high, climbing, cylindric, velvety, rich red-brown, as thick as a goose-quill. *Leaves*

scattered, except the three to five upper, which are whorled, three to five inches long, lanceolate or elliptic-lanceolate, acuminate, base acute, seven-nerved, bright dark green; petiole short, twisted. *Umbel* pendulous, of about four unequal, long, slightly spreading, pubescent four to six-flowered peduncles, each five to ten inches long; bracts lanceolate or ovate-lanceolate, one quarter to three quarters of an inch long, green, spreading; pedicels spreading, one inch long, green. *Ovary* turbinate, trigonous, with three thick ribs. *Perianth* one and a half inches long, subcampanulate, obtusely trigonous; outer segments thick, fleshy, waxy, rose-red with a few brown spots round the margin at the tip, obovate, obtuse, very convex, obscurely keeled at the back, with a thick rib towards the tip; inner segments a little shorter and much narrower, spathulate, obtuse, apiculate, quite entire, pale yellow blotched with brown, claw concave at the base in front. *Anthers* dark-purple. *Style* columnar; stigmas 3, short, spreading.—*J. D. H.*

Fig. 1, Ovary, style, and stigma; 2, outer, and 3, inner perianth-segment:—*all magnified.*

Vincent Brooks Day & Son lith

Tab. 5928.

XIPHION FILIFOLIUM.

Native of Southern Spain and Marocco.

Nat. Ord. Iridaceæ.—Tribe Irideæ.

Genus Xiphion, *Tourn.*; (*Tab. nost.* 5890.)

Xiphion *filifolium*; foliis valde elongatis setaceo-filiformibus flexuosis scapum 1-rarissime 2-florum longe superantibus, spathis elongatis acuminatis striatis margine membranaceis, perianthii violacei tubo limbum dimidium superante, laciniis exterioribus supra medium angustis dein obovato-rotundatis, disco vitta lutea azureo-limbata truncata notatis, interioribus obovato-lanceolatis supra medium erosis apice 2-dentatis, capsula obtusa acute 3-gona.

Xiphion filifolium, *Klatt in Linnæa*, vol. xxxiv. p. 571; *Baker in Seem. Journ. Bot.* (1871), vol. ix. p. 14.

Iris filifolia, *Boiss. Voy. in Esp.*, vol. ii. p. 602, t. 170; *Willk. et Lange, Prodr. Fl. Hisp.*, vol. i. p. 142.

Now that the cultivation of hardy herbaceous plants is coming prominently into vogue, many beautiful novelties will be annually added to our beds, borders, and frames, for many years to come, and amongst them few are more desirable than the species of *Iris* and *Xiphion*, because of their facility of treatment, their rapid multiplication, varieties of gorgeous colouring, and comparatively early season of flowering.

The species of *Xiphion* inhabit, for the most part, dry exposed places in the Mediterranean region, flowering from March to May, a month or two before they arrive at perfection in this country. *X. filifolium* is a native of Southern Spain, where it was discovered by Boissier, in sandy calcareous rocks on the Sierra Bermeja, at an elevation of 3000 to 4000 feet (French); it probably also inhabits Marocco, where

the magnificent *X. tangitanum* grows, a much larger plant, with darker more maroon-coloured flowers. Flowering specimens of this latter gorgeous plant were given me at Tangiers by Sir J. Drummond Hay, *apropos* of which Miss Hay informed me that a similar smaller flowered kind grew in the vicinity of Tangiers, which most probably is *X. filifolium*.

The specimen of *X. filifolium* here figured was brought by Mr. Maw from the rock of Gibraltar in 1869, and flowered in Benthal Gardens in July of the present year. In Gibraltar it flowers in April.

Descr. *Bulb* from the size of a hazel nut to a walnut, with a brown fibrous coat. *Stem* slender, one to two feet high, terete, leafy. *Leaves* sometimes twice as long as the stem, glabrous, filiform, flexuous, convolute, keeled, dilated at the base into a slender sheath. *Spathes* two to three inches long, compressed, narrow lanceolate, acuminate, green, pale brown when dry, deeply striated, margins and tip broadly membranous. *Flowers* one, rarely two, of a fine violet purple, one and a half to two and a half inches in diameter; tube of perianth slender, half an inch long, enclosed in the spathes; segments about twice as long as the tube; outer with a narrow claw, which rather suddenly expands into a reflexed orbicular obovate lamina, that bears on its disk a golden-yellow truncate stripe bordered with blue; inner segments obovate-lanceolate, erose above the middle, tip notched. *Stigmas* deeply two-lobed; lobes lanceolate, acute, erose. *Capsule* one to one and a half inches long, linear, trigonous, acute at both ends.—*J. D. H.*

Tab. 5929.

EPIDENDRUM Pseudepidendrum.

Native of Central America.

Nat. Ord. Orchideæ.—Tribe Epidendreæ.

Genus Epidendrum, L. (*Lindl. Fol. Orchid., Epidendrum.*)

Epidendrum (Amphiglottium) *Pseudepidendrum;* caulibus cæspitosis validis teretibus simplicibus basi modice incrassatis, apicem versus foliosis, foliis distichis lineari-oblongis acuminatis coriaceis enerviis, racemo terminali laxo paucifloro, pedunculo compresso spathaceo, pedicellis ovariisque gracilibus, bracteis parvis, floribus majusculis viridibus, labello columnaque miniato-aurantiacis, sepalis $1\frac{1}{2}$-pollicaribus anguste spathulatis acutis, petalis sepalis æquilongis angustissimis apice dilatato elliptico, labello fere orbiculato retuso serrulato, disco carinis 5 percurso, callo basi lobato.

Epidendrum Pseudepidendrum, *Reich. fil. Xen. Orchid.*, vol. i. p. 160, t. 53.

Pseudepidendrum spectabile, *Reich. fil. in Mohl. and Schlecht. Bot. Zeit.*, vol. x. p. 733.

A very curious species, remarkable for the singularity of its colouring, discovered by Warscewicz, growing on a species of *Ficus*, in the Cordillera of Chiriqui, at an elevation of 4000 feet, flowering in January and February. For this information I am indebted to Reichenbach's "Xenia," quoted above, where the plant is figured and coloured from a drawing made by its discoverer.

The district of Chiriqui is in the peninsular portion of New Grenada, westward of Panama, and bordering Costa Rica on the East; it is a hot and humid climate, where the Cordillera reaches no great elevation. The specimen here figured flowered in Messrs. Veitch's establishment in the King's Road, Chelsea, in July of this year. It was obligingly sent for figuring in the *Botanical Magazine*.

October 1st, 1871.

Descr. *Stems* two to three feet high, tufted, stout, cylindric, smooth, tumid at the base, rather distantly jointed, nodes not swollen, upper part amongst the leaves dark brown. *Leaves* confined to the top of the stems, five to seven inches long by two-thirds to three-quarters of an inch broad, distichous, suberect, narrowly linear-oblong, acuminate, coriaceous, obscurely nerved at the back, deep green, back keeled, margins recurved; sheaths short, obscurely compressed. *Raceme* terminal, few-flowered; peduncle very slender, compressed, clothed with appressed acute sheathing membranous brown spathes; bracts one-eighth of an inch long, acute. *Ovaries* and pedicels very slender, together one and a half inches long. *Perianth* two and a half inches in diameter, bright green, except the lip and upper part of the column, which are of an orange vermilion colour, contrasting singularly with the green. *Sepals* narrow or elliptic-spathulate, subacute, rather concave, less than half an inch at the broadest part. *Petals* as long as the sepals, very slender, with small lanceolate acute tips, ascending and incurved. *Column* connate, with the base of the lip into one subclavate, laterally compressed rather slender body. *Lip* (the free portion) suborbicular, retuse or emarginate, from the lip being recurved, margin erose and obscurely lobed; disk with three to five parallel smooth ridges, and a three-lobed callus at the base. *Column* (the free portion) very short, stout, narrowed upwards. *Anthers* small, hemispheric.—*J. D. H.*

Fig. 1, column and lip:—*magnified.*

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W. Fitch, del. et lith.

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Tab. 5930.

ECHIDNOPSIS cereiformis.

Native of South Africa.

Nat. Ord. Asclepiadeæ.—Tribe Stapelieæ.

New Genus Echidnopsis.

Gen. Char. *Calyx* 5-fidus, lobis triangularibus acutis valvatis. *Corolla* hemispherico-rotata, 5-loba, lobis ovato-rotundatis acutis. *Corona staminea* 0. *Antheræ* erectæ, incurvæ, late elliptico-ovatæ, apicibus membranaceis horizontalibus. *Pollinia* erecta; massæ globosæ, lateribus contiguis compressis rectis pellucidis, corpusculo parvo ope stipitis brevis compressi cum margine pellucido continui affixæ. *Fructus* . . . . —Herba *perennis, carnosa, succulenta, aphylla.* Caules *elongati, cylindrici, obtusi, cernui v. penduli, hic illic constricti, longitudinaliter 8-sulcati, jugis obtusis transverse constrictis, in areolas quadratas v. hexagonas medio papilla alba notatas divisis.* Flores *parvi, flavi, in sulcis fasciculati, sessiles.*

Echidnopsis *cereiformis*, Nobis.—Tab. nost. 5930.

A very curious new genus of plants, belonging to the same tribe of *Asclepiadeæ* as *Stapelia* and its allies, but very different from any of them in the structure of all its parts. It has been for a long time cultivated in the Royal Gardens and is not unknown in other collections under the name of *Stapelia cylindrica*, a genus with which it differs most widely. The native country of this singular plant is altogether unknown, and on reference to Mr. Wilson Saunders, from whose fine collection of succulents we have lately received specimens, he tells me, that though he has cultivated it for many years, he is equally ignorant of its native country.

Treated like a *Cereus* or *Stapelia*, this plant thrives in the warm end of the succulent house at Kew, and flowers from the month of June to October. It would probably thrive well in a hanging pot.

October 1st, 1871.

Descr. *Roots* fibrous. *Stems* tufted, one to two feet long, suberect or pendulous, one-half to three-quarters of an inch diameter, simple or here and there producing a short side-shoot, cylindric, slightly constricted at irregular distant intervals, eight-grooved and ridged, the ridges divided by shallow transverse depressions into tetragonal or hexagonal prominent areoles, each with a white central papilla (the remains of an undeveloped leaf), of a uniform bright green, firm consistence, and minutely granular surface. *Buds* from the transverse depressions on the ridges. *Flowers* small, produced in the ridges towards the ends of the branches, fascicled, sessile, bright yellow, a quarter to one-third of an inch diameter. *Calyx* tube, hemispheric; lobes 5, triangular, acute, spreading and recurved, valvate. *Corolla* very broadly rotate-campanulate, the short open hemispheric tube expanding into 5 orbicular acute spreading lobes. *Staminal* crown 0; anthers forming a minute depressed five-lobed body in the centre of the flower, connate at their bases and coherent at their membranous tips with the small five-gonal stigma; each broadly elliptic, inflexed from about the middle, smooth. *Pollen* masses erect, globose, yellow; their contiguous surfaces produced into a vertical transparent membrane, that is continuous with the very short cuneate stalk, which again is fastened to the small brown gland.—*J. D. H.*

Fig. 1, Flower; 2, calyx and stamens; 3, pollen-masses:—*all magnified.*

W Fitch, del et lith

Vincent Brooks Day & Son Imp

Tab. 5931.

ARISÆMA CURVATUM.

Native of the Himalaya.

Nat. Ord. Aroideæ.—Tribe Arisareæ.

Genus Arisæma, *Martius*; (*Schott. Prod. Syst. Aroid.*, p. 24).

Arisæma *curvatum;* foliis 1–2 pedatis, foliolis 8–18 sessilibus v. breviter petiolatis lanceolatis acuminatis v. caudato-acuminatis integerrimis, spathæ tubo viridi cylindrico obscure albo-vittato, fauce aperta, lamina fornicata elliptica acuminata dorso brunnea tubo subæquilonga, spadice e fauce procurvo ultra laminam longe producto, organis neutris 0, appendice gracili arcuatim retrocurva cylindrica a basi ad apicem sensim attenuata.

Arisæma curvatum, *Kunth. Enum. Plant.*, vol. iii. p. 20. *Schott. Prod. Syst. Aroid.*, p. 37.

Arisæma helleborifolium, *Schott. Synops. Aroid.*, p. 29; *Prod. l. c.*, p. 36.

Arisæma, Wall. Cat., n. 8927.

Arum curvatum, *Roxb. Fl. Ind.*, vol. iii. p. 506.

A very common plant in the humid forests of the Himalaya, from Bhotan to Simla, at elevations of 7000 to 9000 feet; first described by Roxburgh from a specimen from Nepal, which flowered in the Calcutta Botanic Gardens. It is also found in the Khasia mountains, at elevations of 5000 to 7000 feet, growing amongst rank herbage; and a similar, if not identical species inhabits the mountains of the Concan, in the Peninsula of India.

The tuberous roots of this and allied species of *Arisæma* are used for food in times of scarcity by the Lepchas of Sikkim; they are prepared by burying them in masses in the ground, until acetous fermentation sets in, when they are dug up, washed, and cooked. By this means the poisonous properties of the root are in part dispersed, but

not altogether, and violent illnesses often follow a hearty meal of "Tong," as this food is called. The nutritious starch, with which these tubers are filled, might be easily separated by grating and washing, and an aliment as good as Portland Island arrow-root (the starch of *Arum maculatum*) be thus procured in quantities.

The Royal Gardens are indebted for tubers of this plant to Mr. Gammie, formerly a gardener at Kew, and now the intelligent superintendent of the Sikkim Cinchona plantations; it flowered in a cool greenhouse in May of the present year.

Descr. *Tuber* as large as a nut or walnut, with many fleshy fibres. *Leaves* usually two, sheathing the back of the scape, and surrounded by two or three appressed sheaths at the base, which, as well as the petioles, are blotched with dull purple; petiole six to ten inches long, cylindric; lamina six to twelve inches in diameter, orbicular in outline; pedate; leaflets eight to eighteen, distant, spreading horizontally and drooping, four to eight inches long, sessile or shortly petioled, lanceolate, acuminate or caudate at the tip, bright green, quite entire, membranous, obscurely three-nerved. *Scape* two to four feet high, terete, erect. *Spathe* erect, four to seven inches long; tube cylindric, green, obscurely striped with white, half the length of the whole spathe; edges hardly overlapping; blade elliptic, vaulted, arching forwards, with an acute, often erect tip, green inside, green or brown-purple outside. *Spadix* one-third to twice as long as the spathe; flowering portion included in the tube of the spathe; naked portion exserted, cylindric, arching forwards and upwards, smooth, green, tapering from the flowering portion to the slender suberect tip. *Stamens* scattered, filament columnar; anther capitate, three to four-lobed. *Ovaries* scattered, flaggon-shaped; style very short, stigma papillose; ovules three to four, basal. *Fruit* a globose mass of fleshy red berries.—*J. D. H.*

Fig. 1, Reduced figure of whole plant; 2, leaf and portion of scape; 3. spathe; 4, portion of spadix:—*all of natural size;* 5, anthers; 6. stamen; 7, ovary; 8, vertical, and 9, transverse section of do.:—*all magnified.*

W Fitch, del.et lith

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Tab. 5932.

MERYTA latifolia.

Native of Norfolk Island.

Nat. Ord. Araliaceæ.—Series Panaceæ.

Genus Meryta, *Forst.*; (*Benth. and Hook. f., Gen. Plant.*, vol. i. p. 933).

Meryta *latifolia*; foliis 1-3-pedalibus elongato-obovatis v. subpanduriformibus basi angustata subcordata, petiolo crassissimo breviusculo, thyrso florum hermaphroditorum terminali oblongo erecto, capitulis bracteatis compositis cylindraceo-oblongis secus rachim crassissimam spicatis, floribus sessilibus flavis densissime confertis, calycis tubo oblongo utrinque truncato, limbo 6-lobo reflexo, staminibus stylisque 6, ovario 6-loculari.

Meryta latifolia, *Seemann in Bonplandia*, 1862, p. 295; *Flor. Viti*, p. 119.

Botryodendron latifolium, *Endl. Prodr. Flor. Ins. Norfolk.*, p. 62; *Walp. Rep.*, vol. ii. p. 433.

Aralia macrophylla, *Cunningham, ex* MSS.

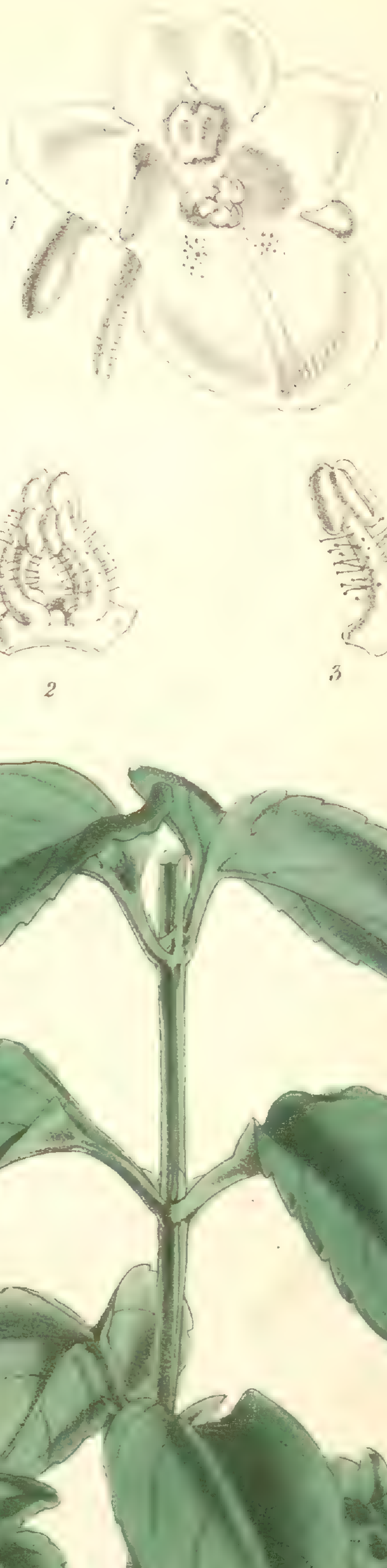
The noble foliage of this very curious plant renders it a conspicuous ornament in a stove large enough to show it off to advantage, where it should be placed so as to tower above the surrounding vegetation; under which circumstances it rivals the *Grias cauliflora* figured at Tab. 5622 of this work. It is a native of Norfolk Island, where it was discovered by F. Bauer during Flinders' voyage to Terra Australis, and by whom careful drawings were made on the spot, which are deposited in the Imperial Herbarium of Vienna, and from which Endlicher's description was drawn up. Since that period it has been collected by Allan Cunningham, during his visit to Norfolk Island, when superintendent of the Botanic Gardens of Sidney, and who sent living plants to the Royal Gardens, Kew, about thirty-five years ago. One of

these is still flourishing, and flowered for the first time in the great Palm House in March, 1866.

The genus *Meryta* is confined to the Pacific islands. It was discovered first by G. Forster, during Captain Cook's Second Voyage; since which time two species have been found in Norfolk Island, one in the Isle of Pines (New Caledonia), and one in the islets off the east coast of New Zealand. (See *Seemann's Flor. Viti*, p. 119.)

Descr. A tree, with a slender erect trunk, fifty to sixty feet high, branched at the top. *Leaves* two to three feet long, crowded at the ends of the branches, spreading, narrow-obovate or somewhat fiddle-shaped, acute or obtuse, base cordate, bright-green, coriaceous; petiole short, very stout. *Flowers* male, female, and hermaphrodite (according to Endlicher's description taken from Bauer's drawings); in our plant hermaphrodite, with imperfect anthers, most densely crowded into oblong compound heads which are two to three inches long, and formed of innumerable clusters of about six sessile flowers, seated on a thick erect green rachis; bracts at the base of the heads one to one and a half inches long, ovate-lanceolate, with a dorsal tooth. *Calyx* nearly one-half inch long, oblong, subcylindric, truncate, girt with a low cupular bracteole at the base; lobes or teeth six, triangular-ovate, acute, reflexed. *Stamens* six; filaments very short; anthers ovate-oblong, imperfect. *Styles* six, stout, subulate, recurved, grooved and papillose along the inner face. *Ovary* six-celled.

Fig. 1, Reduced figure of whole plant; 2 and 3, portions of leaf and (4) of inflorescence:—*of the natural size*. 5, flower; 6, vertical, and 7, transverse section of the ovary:—*all magnified*.



W.Fitch,del.

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Tab. 5933.

DIASCIA Barberæ.

Native of South Africa.

Nat. Ord. Scrophulariaceæ.—Tribe Hemimerideæ.

Genus Diascia, *Link and Otto ;* (*Benth. in DC. Prodr.*, vol. x. p. 256).

Diascia *Barberæ ;* erecta, foliis petiolatis ovatis apice rotundatis crenato-serratis supremis sessilibus, racemo stricto erecto terminali glanduloso bracteato, floribus majusculis, bracteis late ovatis, calycis segmentis lineari-oblongis obtusis, corolla rosea, lobis rotundatis, supremis parvis, lateralibus majoribus, inferiori multo majore subangulato, calcaribus cylindricis decurvis obtusis corollæ lobis subæquilongis, filamentis crassiusculis glandulosis, ovario glaberrimo.

The pretty Cape genus *Diascia*, which, like *Satyrium* amongst Cape Orchids, is remarkable for its two spurs, comprises some thirty species, of which but one had previously been figured from living specimens in Europe, and this in a German work. Most of them are inconspicuous-flowered plants, and little worthy of cultivation for their beauty. Hitherto nothing is known of the economy of their two-spurred flowers; the spurs are, no doubt, filled with nectar, and their function is to attract insects for the purpose of effecting cross-fertilization, towards which operation the curious ocellated green spot on the throat of the corolla may be expected to be further subservient. It is to be hoped that this curious subject will be taken up by some of the intelligent botanical observers of South Africa, who should watch the flower for the visits of insects, and carefully scrutinize the operations of these in their search for honey.

The Royal Gardens are indebted to their highly-valued

correspondent, Mrs. Barber, for seeds of this plant, which arrived in 1870, and flowered in July of the present year. As a species *D. Barberæ* agrees best with the description of *D. macrophylla*, Benth. (of which I have seen no specimen), but it differs in being apparently perennial, stout habit, and glandular raceme and filaments.

Descr. *Root* perennial ? *Stem* ten to sixteen inches high, strict, erect, square, glabrous, green. *Leaves* one to one and a half inches long, petioled, ovate, rounded at the tip, obtusely serrate, suddenly narrowed into the rather stout petiole, glabrous, bright green on both surfaces; upper leaves sessile, smaller; petiole one-half to three-quarters of an inch long. *Racemes* terminal, strict, erect, four to six inches long, many-flowered, simple, bracteate; bracts one-sixth to a quarter of an inch long, ovate, obtuse; pedicels slender, one-half to three-quarters of an inch long, glandular. *Calyx* a quarter of an inch in diameter, divided nearly to the base into five subequal linear-oblong obtuse or subacute segments. *Corolla* one-half to two-thirds of an inch in diameter, bright rose-pink with a small yellow spot on the throat between the bases of the two upper petals, which spot has two green dots in its centre; two upper lobes small, suborbicular; two lateral about twice as large, and nearly of the same shape; lower lobe as large as all the others put together, obscurely four-angular; spurs as large as the lower corolla lobe, diverging, cylindric, decurved, blue-purple towards their rather swollen tips. *Stamens* with short curved cylindric glandular filaments, and small oblong anther-cells. *Ovary* quite glabrous.—*J. D. H.*

Fig. 1, Flower; 2 and 3, stamens; 4, ovary:—*all magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5934.

PRUNUS CERASIFERA.

Native country unknown.

Nat. Ord. Rosaceæ.—Tribe Pruneæ.

Genus Prunus, *Linn.*; (*Benth. and Hook. f., Gen. Pl.*, vol. i. p. 609).

Prunus *cerasifera*; ramis inermibus, ramulis glaberrimis, foliis elliptico-obovatis acutis serrulatis subtus glabris, floribus subsolitariis v. in ramis abbreviatis fasciculatis pedunculatis, pedunculo glaberrimo, calycis lobis lanceolatis v. ovatis reflexis, petalis obovato-oblongis orbiculatisve, drupis globosis basi intrusis rubris, carne flavo putamine ovoideo acuto adhærenti.

Prunus cerasifera, *Ehrhart Beitruge*, vol. iv. p. 17; *Willd. Sp. Pl.*, vol. ii. p. 997; *Poiret, Dict.*, vol. v. p. 678; *Persoon Synops.*, vol. ii. p. 35; *Grenier et Godron, Flore de France*, vol. i. p. 514; *Koch, Dendrologia*, vol. i. p. 97.

Myrobalan, *Duham. Arbr.*, vol. ii. p. 111, t. 20, f. 15.

Prunus Mirobalana, *Loiseleur, Nouveau Duhamel*, vol. iv. p. 184, t. 57, f. 1, et p. 198, t. 5.

Prunus domestica, *var.* Myrobalana, *Linn., Sp. Pl.*, No. 680; *Loudon, Arboret. Britt.*, vol. ii. p. 688, ii. and vi. tab. 93.

The beautiful Cherry Plum, or "Myrobalan" Plum, the "Cerisette" of the French and "Kirschpflaume" of the Germans, fruits very rarely indeed in England; ripe fruit was, however, sent to Sir W. J. Hooker, in July, 1864, which was drawn for the *Botanical Magazine* by Mr. Fitch, but unfortunately no note was attached to the drawing, either of the place where it grew or the person who communicated it. Under these circumstances, I procured, early in the present year, flowering specimens from the named collection in the Royal Horticultural Society's Gardens at Chiswick, which herewith accompany the figure of the fruit. It will be remarked however, that whilst the lower (fruiting) specimen has solitary fruits, and consequently had solitary flowers in all probability, the flowers of the upper specimens are fascicled on abbreviated branches. All descriptions of *Prunus cerasifera* agree in attributing to it solitary or rarely

geminate flowers, but in Herbarium specimens communicated by Seringe, a very good authority, I find them fascicled as in our figure. Loiseleur, after Duhamel, also an excellent authority, describes the sepals as lanceolate, and petals oval-oblong, which also is not the case in the specimen figured. Lastly, in "Miller's Gardener's Dictionary," the Myrobalan is kept distinct from the Cerisette, and described as having a blue-purple fruit.

The exact affinity of the Myrobalan plum is equally doubtful. Linnæus referred it as a variety to the common Plum, *P. domestica*, from which it is readily distinguished by the glabrous peduncles, globose fruit intruded at the base, acute almost beaked stone, and by its very early flowering. From the Bullace, *P. insititia*, it differs in its glabrous branchlets and leaves, and in the flowers appearing before the leaves. Loudon refers it to *P. domestica*, and further considers *domestica* to be a cultivated form of *P. insititia*, from which last he says the Myrobalan plum appears to him "to be the first remove." In his figure of the fruit the stone is represented as rounded at the summit, which is contrary to the character given by other authors and to our specimen. Lastly, Koch refers to it the beautiful *P. divaricata* of Siberia, the most showy of the spring flowering plums, which, however, differs exceedingly in habit, in the leaves appearing much sooner after the flowers, and in the oblong yellow fruit, which is not intruded at the base. My own opinion is, that both *P. cerasifera* and *domestica* are cultivated states of *P. insititia*.

The native country of the Myrobalan is unknown (except, indeed, we accept Koch's opinion, and refer it to *P. divaricata*, which inhabits the Caucasian provinces); the earlier authors, down to Duhamel, ascribed it to North America, where, however, Pursh says that it is found only about houses, and all later ones mention it as to be seen only in European gardens. Cosson and Germain, in their "Flora of Paris," state that it is naturalized on the banks of the Seine, near the Park of Saint-Maur, but specimens from this locality in Gay's "Herbarium" are marked with a doubt, and appear to me to be referable to *P. insilitia*, having a nearly orbicular stone, and leaves very pubescent beneath.

The Myrobalan plum well deserves cultivation for its early flowering, though on this account it seldom fruits, being generally injured by the frost. The fruit is acid and flesh firm.—*J. D. H.*

Tab. 5935.

PLAGIANTHUS Lyallii.

Native of New Zealand.

Nat. Ord. Malvaceæ.—Tribe Malveæ.

Genus Plagianthus, *Forst.*; (*Benth. and Hook. f., Gen. Pl.*, vol. i. p. 202).

Plagianthus *Lyallii*; arborea, ramulis floribus foliisque subtus stellato-pubescentibus, foliis ovato-cordatis acuminatis profunde duplicato-crenatis, floribus axillaribus paniculatis albis, pedunculis 1-floris ebracteolatis petiolos subæquantibus, calyce late campanulato, petalis oblique obovato-cuneatis, filamentis basi connatis, ovario sub 10-loculari, stylis intus apicem versus stigmatosis, fructu spherico, carpellis membranaceis compressis exalatis.

Plagianthus Lyallii, *Hook. f., Handbook of the New Zealand Flora*, p. 30.

Hoheria Lyallii, *Hook. f., Fl. Nov. Zel.*, vol. i. p. 31, t. 11.

A beautiful small tree, native of the mountainous districts of New Zealand, at an elevation of 2000 to 4000 feet, where it was discovered by Dr. Lyall, R.N., naturalist to H.M.S. *Acheron*, when on the coast survey of that island, under the command of Captain Stokes, R.N. Though unknown in the northern island, it appears to be very abundant in the middle one, and I have received specimens from all the provinces, from Nelson to Otago. It flowers in January, and from its copious flowering forms conspicuous white belts round the margins of the dark Beech forests. In autumn again it is no less conspicuous for the golden colour of its fading foliage, it being one of the few deciduous trees of the New Zealand forests. Not that it is altogether a deciduous tree either, for Dr. Haast informs me that trees growing in the Canterbury district above 3000 feet shed

their leaves; but that those growing below that elevation retain them; a very singular fact, which I should be glad to have verified by observations in other provinces.

Living plants of *Plagianthus Lyallii* were received at the Royal Gardens from Dr. Haast, and flowered in July of the present year. The flowers are subdimorphic, some having much shorter styles than others.

Descr. A small branching tree, twenty to thirty feet high, with the young branches, inflorescence, petioles and leaves beneath more or less clothed with a fine white stellate pubescence. *Leaves* two to four inches long, ovate-cordate, acuminate, basal sinus open or closed, shallow or deep, margin deeply doubly-crenate, upper surface bright green, glabrous, under pale or white; petiole one to one and a half inches long. *Flowers* one to one and a quarter inches in diameter, numerous, drooping, in axillary fascicles of three to five, pure white with pink styles; peduncles one to one and a half inches long, slender, ebracteate. *Calyx* one-third of an inch in diameter, broadly campanulate, 5-lobed, lobes triangular. *Petals* obliquely obovate, retuse on one side towards the apex, concave, spreading. *Stamens* very numerous, filaments slender, connate at the base, obscurely connected into five bundles; anthers minute, yellow. *Ovary* broadly ovoid, about ten-celled, pubescent; styles very slender, connate below the middle, filiform, shortly stigmatose on the inner face and tip. *Fruit* one-half to three-quarters of an inch in diameter, globose, about ten-furrowed, of as many much-flattened membranous carpels that are not winged. *Seed* much compressed.—*J. D. H.*

Fig. 1. Flower of the short styled form; 2, pistil; 3, fruit:—*all but* 2 *of the natural size.*

1.

2.

3.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5936.

MEGACLINIUM PURPURATUM.

Native of Western Tropical Africa.

Nat. Ord. Orchideæ.—Tribe Dendrobieæ.

Genus Megaclinium, *Lindl.*; (*Endl. Gen. Plant.*, 191).

Megaclinium *purpuratum*; pseudobulbo obtuse costato, foliis binis linearioblongis obtusis, rachi ensiformi cuspidato margine undulato curvato, bracteis late oblongis purpureo crebre conspersis marginibus flavo-viridibus, floribus pallide flavo-virescentibus purpureo conspersis, sepalis consimilibus late ovatis aristato acuminatis recurvis, petalis falcato-linearibus, labello ovato obtuso recurvo marginibus infra medium denticulatis.

Megaclinium purpuratum, *Lindl. in Journ. Linn. Soc.*, vol. vi. p. 128.

The singular genus *Megaclinium*, is apparently confined to tropical Africa, whence four described species are known to me: viz., the original *M. falcatum*, Lindl., introduced in 1822, and figured in the Botanical Register (t. 989), *M. maximum*, Lindl. (Tab. nost. 4028); *M. oxypterum*, Lindl., with very acutely angled pseudo-bulbs, but which is in other respects so very near this, that I suspect they may prove to be varieties of one plant; all these are from Sierra Leone. Besides these, Reichenbach, who with good reason refers the genus to a section of *Bolbophyllum* (in *Walper's Annales*, vol. vi. p. 257), enumerates *M. colubrinum*, Rchb. f. (native country unknown), *M. velutinum*, Lindl., from Cape Coast Castle, and *M. Bufo*, Lindl., from Sierra Leone; to these must be added from the Hookerian Herbarium a small Natal species, *M. Sandersoni*, (Oliv. mss.); and two Zambesi species, one (*M. Melleri*, Hk. f.), with loose spathaceous bracts on the scape, and (when dry) three to five winged pseudo-bulbs,

found by the late Dr. Meller on roots and trees on the Manganja range of mountains (Zambesi river), and another also found on the same range, which is in too imperfect a state for description, making eight in all.

M. purpuratum was described by Lindley from dried specimens collected in 1854, by Barter, near Brass, at the mouth of the Nun river, when accompanying Baikie's Niger Expedition; the specimen here figured, flowered in the garden of T. B. Horsfall, Esq., MP., Bellamour Hall, Rugeley.

Descr. *Rhizome* as thick as a goose-quill, creeping, woody. *Pseudo-bulbs* sheathed at the base, one and a half to two and a half inches long, ovate-oblong, compressed, obtusely three to four ribbed, bright green, with two scarious basal sheaths. *Leaves* in pairs at the top of the pseudo-bulb, linear-oblong, obtuse, keeled, dark green. *Scape* five to nine inches long, stout, flexuous, pale green, streaked with purple; sheaths short, obtuse, closely appressed to the scape. *Rachis* including the connate bracts, flattened, four to six inches long, by three-quarters to one inch broad, linear, much compressed, margin undulated, keeled down the middle in front; gradually narrowed below into the scape; tip acute, with a stout mucro; colour a pale dirty yellow-green, sprinkled with red-purple, except along the borders of the bracts. *Flowers* a quarter inch long; buds acuminate. *Sepals* nearly equal, all broadly ovate, narrowed suddenly into long acuminate recurved tails, streaked and speckled with purple. *Petals* rather shorter and much narrower, linear, acute, falcate, edged with purple. *Lip* ovate, obtuse, cordate at the base, recurved, mobile; edges toothed from the base to the middle. *Column* short, wings triangular.—*J. D. H.*

Fig. 1, Flower; 2, front, and 3, lateral view of the same, with the sepals removed:—*all magnified.*

W. Fitch, del. et lith.

Vincent Brooks Day & Son, Imp.

CRINUM BRACHYNEMA.

Native of Bombay.

Nat. Ord. Amaryllideæ.—Tribe. Amaryllеæ.

Genus Crinum, Linn.; (*Herbert Amaryllid.*, p. 242).

Crinum *brachynema;* bulbo late ovoideo fere globoso, foliis erecto-recurvis latissime loriformibus obtusis concavis ecarinatis glaberrimis viridibus, umbella multiflora, pedunculis brevibus, bracteis filiformibus, ovario tenui, floribus precocibus odoris, perianthio albo, tubo gracili pollicari, limbo late infundibulari, segmentis patulis elliptico-oblongis apiculatis, filamentis antheris linearibus flavis brevioribus, stylo filiformi tubo multo breviore.

Crinum brachynema, *Herbert in Bot. Reg.* 1842, *Misc.*, p. 36; *Kunth. Enum.*, vol. v. p. 581.

A native of Bombay, whence bulbs were sent to the Royal Gardens in 1870, by Mr. Woodrow, late of Kew, now of the Botanic Gardens, Poona, which flowered in May of the present year. It is remarkable that so fine and sweet-scented a plant from so well explored a country, should not have found a place either in Roxburgh's Flora Indica, or in Gibson and Dalzell's Bombay Flora; and it shows how much still remains to be done in the long hunted field of British India.

Except in the shorter pedicels of the flowers, and in the characters of the style, this plant agrees well with Herbert's description of *C. brachynema*, which was imported by the Messrs. Loddiges from Bombay, and flowered at Spofforth in 1842; but as the author of that species says nothing of the form or size of the leaf (no doubt from the fact that the leaves are produced long after the flowers) this identification must remain doubtful. The leaves of the

Kew plant were not developed till three months after the flowers. With regard to the style, which Herbert describes as purplish, with a shortly lobed white stigma, it differs from that of the plant here figured, though agreeing in the more important character of the remarkable shortness of that organ, which is perhaps imperfect.

Descr. *Bulb* as large as the fist, nearly globose, crown short, conic, straw-coloured. *Leaves* produced long after the flowers, erect, then recurved, one and a half to two feet long, three to three and a half inches broad, linear-oblong, or very broadly strap-shaped, obtuse, concave, not furrowed keeled or margined, bright green, quite glabrous and smooth. *Scape* eight to twelve inches high, hardly compressed, 15- to 20-flowered. *Spathes* green, reddish at the tips; bracts subulate or filiform. *Flowers* subsessile, drooping, pure white, fragrant. *Ovary* half an inch long, slender. *Perianth*-tube one to one and a half inches long, curved, slender, white; limb two and a half to three inches in diameter; segments spreading, but not widely, equal, elliptic-oblong, apiculate, one and a half inch long, by three quarters of an inch broad. *Stamens* very shortly exserted; anthers linear, yellow, one third of an inch long, twice as long as the subulate, white filaments. *Style* very slender, included; stigma shortly 3-lobed.—*J. D. H.*

Fig. 1, Tube of perianth, ovary, and stamens:—*magnified*.

W. Fitch, del et lith.

Vincent Brooks, Day & Son Imp

Tab. 5938.

SPHÆRALCEA MINIATA.

Native of La Plata.

Nat. Ord. Malvaceæ.—Tribe. Malveæ.

Genus Sphæralcea, *St. Hil.*; (*Benth. and Hook., Gen. Pl.*, vol. i. p. 204).

Sphæralcea *miniata*; fruticosa, tomentosa, foliis trilobis grosse inæqualiter crenatis lobo intermedio productiore oblongo acuto lateralibus brevibus patentibus obtusis, stipulis subulatis persistentibus, petiolo lamina breviore, cymis axillaribus paucifloris, pedicellis calyce subæquilongis, bracteis setaceis, calycis 5-lobi lobis acutis, corolla ampla miniata.

Sphæralcea miniata, *Spach, Hist. Nat. Veg.*, vol. iii. p. 352.

Sphæroma miniatum, *Garcke in Bot. Zeit.*, 1853, p. 847; *Walp. Ann.*, vol. iv. p. 301.

Malva miniata, *Cav. Ic.*, vol. iii. p. 40, t. 278; *Jacq. Fragm.*, t. 132; *DC. Prod.*, vol. vi. p. 434; *Sweet, Brit. Fl. Gard.*, ser. 2, vol. ii. t. 120; *Willd., Sp. Pl.*, vol. iii. p. 783; *Ait. Hort. Kew.*, vol. iv. p. 214.

The "Painted Mallow" of Hortus Kewensis was introduced into England in 1798 by the Marchioness of Bute, and was extensively grown at one time both as a greenhouse ornament and shrubby plant, being regarded, according to Sweet (writing in 1831), as of great importance to the decoration of shrubberies in the months of October and November, at which time it is profusely clothed with fine vermilion-coloured blossoms. It is added, however, that it is apt to be killed in severe winters if left without protection; this, no doubt, has led to its disappearance from our borders, though why it should be neglected in the greenhouse does not appear.

The native country of *S. miniata* was for many years unknown. Aiton (Hortus Kewensis) gives South America for its habitat. Cavanilles, who first figured and described it, did so from a plant which flowered in the Madrid

Botanic Garden in July 1795; whence, in all probability, the plant was introduced into Kew in 1798 by M. Thouin, from whom there is a dried specimen in Bentham's Herbaria (now at Kew). De Candolle and Sweet both say that the native country is unknown; but there are plenty of wild specimens in the Kew Herbarium, gathered by Gillies near Mendoza, growing in uncultivated fields at an elevation of two thousand five hundred to three thousand feet; as also by Tweedie, in the Argentine Republic, and by C. Darwin at Bahia Blanca. For its re-introduction we are indebted to our old correspondent, Professor Jameson, formerly of Quito, who after his removal to Chili sent seed from the neighbourhood of San Juan to his friend, Isaac Anderson Henry, Esq., F.L.S., who communicated the flowering specimens here figured in June of the present year.

Descr. A branching undershrub two to four feet high, uniformly clothed with a soft white tomentum. *Leaves* one to two inches long, longer than the petioles, 3-lobed and coarsely unequally crenate-toothed; mid-lobe longest, ovate or oblong, acute, lateral spreading, obtuse; stipules subulate, persistent though withering. *Flowers* vermilion-red, one to one and a quarter inch in diameter, in axillary few-flowered cymose racemes; peduncle and short pedicels slender; bracts beneath the calyx three, subulate. *Calyx* hemispherical, 5-lobed to the middle, lobes acute. *Petals* obcordate, claw purplish. *Stamens* with rather short filaments. *Stigmas* very numerous.—*J. D. H.*

Fig. 1, Ovary; 2, ventral section of a cell of do. :—*both magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5939.

GILIA ACHILLEÆFOLIA.

Native of California.

Nat. Ord. Polemoniaceæ.

Genus Gilia, *Ruiz and Pav.* (*A. Gray in Proc. Amer. Acad.*, 1870, p. 261).

Gilia *achilleæfolia ;* erecta, caule glabriusculo ad nodos sublanato, foliis bi-tri-pinnatisectis segmentis anguste linearibus patenti-recurvis acuminatis, cymis in globum longissime pedunculatum densissime congestis, corolla calyce lanato unicolore longiore, calycis lobis triangularibus acutis tubo multo brevioribus.

Gilia achilleæfolia, *Benth. in Bot. Reg. sub. tab.* 1662, *et in DC. Prod.*, vol. ix. p. 311 ; *A. Gray in Proc. Amer. Acad.*, June, 1870, p. 277.

A native of California, where it was discovered by David Douglas in 1833, and where it has been since collected by many travellers and botanists. As a species it comes very near to *A. capitata* (Tab. nost. 2698), having the same Scabious-like ; habit but this is a much handsomer plant, with brighter blue flowers of a larger size, and collected into perfectly spherical heads. These and their immediate allies are considered by Asa Gray, as together forming the type-section (*Eugilia*) of the genus, which he divides into twelve such sections, including sixty-five species, of which all but two are natives of North America, West of the Rocky Mountains.

G. achilleæfolia is a hardy annual, introduced by Messrs. Veitch, of the Royal Exotic Nurseries, King's Road, Chelsea, to whom I am indebted for the fine specimens now figured, which flowered in August of the present year. It must not be confounded with the plant figured under the same name in Tab. 3440 of this work, as also in the *Botanical Register* (Tab. 1681), and Sweet's *British Fl. Garden* (iii. t. 180), which is *G. multicaulis*, Benth., a totally different species.

December 1st, 1871.

Descr. A slender erect annual, with the habit of a *Scabious*, glabrous, or more or less pubescent, especially at the nodes, which are usually woolly. *Leaves* scattered, spreading, three to five inches long in garden specimens, often only one to two inches long in dwarf native ones, laxly 2–3-pinnatisect, with spreading and recurved narrow-linear acuminate, or almost aristate lobes one-twelfth to one-eighth inch broad. *Flower-heads* one and a half inches diameter, globose, of a uniform fine cobalt blue, covered with large projecting stamens, formed of innumerable few-flowered, densely-packed cymes. *Calyx* woolly; tube obvoid; teeth five, triangular-acuminate, erect. *Corolla-tube* funnel-shaped, rather longer than the calyx; limb half an inch diameter; lobes five, oblong, obtuse, spreading. *Filaments* inserted at the mouth of the corolla, as long as its lobes, erect; anthers oblong. *Style* slender, exserted; stigmas three.—*J. D. H.*

Fig. 1, Flower:—*magnified.*

Tab. 5940.

AGAVE Besseriana.

Tropical America.

Nat. Ord. Amaryllideæ.—Tribe. Agaveæ.

Genus Agave, *Linn.*; (*Endl. Gen. Plant.*, p. 181).

Agave *Besseriana*; subcaulescens, foliis 3–6-pollicaribus anguste ellipticolanceolatis crassissimis rigidis rectis viridi-glaucescentibus, supra lente subtus valde convexis, spina terminali valida elongata marginalibusque remotis uncinatis brunneis, vagina semilunari lamina latiore, bracteis parvis sparsis triangulari-ovatis acutis scapo valido multoties angustioribus inferioribus e basi lanceolata subulatis, floribus paucis racemosis erectis 2-pollicaribus viridibus, perianthii tubo subcylindrico lobis lingulatis erectis obtusis crassis longiore, antheris perianthii segmentis subæquilongis exsertis erectis aurantiacis, stigmate obscure lobato.

Agave Besseriana, *Jacobi in Hamburg Garten-und-Blumen-Zeitung*, 1865, p. 155.

The *Botanical Magazine* has no higher function than that of figuring such plants as are rarely known to flower in this country, and are so difficult of preservation for scientific purposes, or for future identification, that but for good coloured plates they can scarcely ever be recognised. This remark applies especially to Agaves, of which fifteen species have now been illustrated in this work, a very small proportion of the number supposed to exist in European collections. Of these upwards of one hundred are enumerated by Major General Jacobi's "Versuch zu einen systematischen Ordnung der Agaveen" (Ottos Hamburger Garten-und-Blumenzeitung, 1864), of which, however, comparatively few have been described from flowering specimens, and many may consequently prove to be mere forms.

A. Besseriana flowered in spring of the present year, in the unique collection of W. Wilson Saunders, Esq., at Hillfield,

Reigate, who has kindly communicated his own drawings, notes, and analysis for insertion in the Magazine; its native country is unknown, but probably Mexico. It was procured from Belgium under the name of *A. Besseriana hystrix*, and agrees with Jacobi's description in every detail.

Descr. *Stemless*. *Leaves* thirty to forty in a dense rosette, five to six inches long, two thirds to three-quarters of an inch broad about the middle, narrowly elliptic-lanceolate, gradually contracted into a rigid brown spine an inch long, contracted at the base, and suddenly dilated into a broad semilunar sheath, upper surface slightly convex except towards the tip, under very convex; colour pale glaucous-green; marginal spines one-twelfth to one-tenth of an inch, upcurved, distant, brown. *Scape* two feet three inches high, stout, stiff, sparsely bracteate; lower bracts erect, one inch long, subulate from a lanceolate base, upper triangular, acute, small; all much narrower at their base than the scape. *Flowers* about ten, two to two and half inches long excluding the large anthers, solitary or geminate; peduncle half an inch long, with two or three minute bracteoles, and a triangular basal bract. *Perianth-tube* one and a half inches long, terete, narrowly urceolate, 6-furrowed at the top, dark green; lobes erect, half an inch long, narrowly tongue-shaded, obtuse, convex, contracted at their insertion; green on both surfaces, tinged with brown towards the tips. *Filaments* yellow-green, subulate, erect, rather longer than the perianth-lobes; anthers linear, rather shorter than the filaments, orange-yellow.—*J. D. H.*

Fig. 1. Whole plant:—*reduced*; 2, leaf and 3, inflorescence:—*of the natural size.*

W Fitch del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5941.

OPHRYS lutea.

Native of Southern Europe and N. Africa.

Nat. Ord. Orchideæ.—Tribe. Ophrydeæ.

Genus Ophrys, *Linn.* (*Lindl., Gen. and Sp. Orch.*, p. 372).

Ophrys *lutea;* foliis oblongis, sepalis ovato-oblongis obtusis viridibus incurvis, petalis lineari-oblongis obtusis glabris, labello ambitu obtuse subquadrato convexo basi subcuneato 3-lobo lobis aureis planiusculis latis intermedio 2-lobo lobulis rotundatis, lateralibus rotundatis, disco fusco-purpureo medio fascia violacea 2-cruri notato.

Ophrys lutea, *Cav. Ic.*, vol. ii. p. 46, t. 160; *Lindl., Gen. & Sp. Orchid.*, p. 372; *Sweet, Brit. Fl. Gard.*, vol. iii. t. 206; *Hook., Exot. Fl.*, t. 10; *Reich. Pl. Crit.*, t. 857; *Ic. Fl. Germ.*, t. 446; *Moggridge Contrib. Flor. Mentone*, t. 46; O. insectifera, var. γ *Linn., Sp. Pl.*, p. 949.

Naturalists, no less than Horticulturists, must regret the withdrawal of that magnificent collection of European Orchideæ from the grounds of H. R. H. the Comte de Paris at Twickenham, to which allusion has been made under tabs. 5844 and 5712 of this work, and selections from which have been exhibited for several years past at the Horticultural Exhibitions of London. To this source we are indebted for the specimen of the singular *Ophrys* here figured, which, though it has been flowered at Kew and elsewhere in England, at various times, has nowhere else been brought to anything like the perfection that it attains at Twickenham. Not that the cultivation of the European tuberous orchids presents any real difficulty; all that is wanted to ensure success being care and common sense. Sweet indeed, so long ago as 1827, said of this very species, "it succeeds well in a warm border by the side of a wall in a southern aspect; the soil to be sandy loam, and if a little pounded chalk be mixed with it, all the better;" he adds that worms are its chief enemy, which toss

the tubers above ground; for this the simple remedy is lime-water, which is otherwise advantageous to this class of plants.

Ophrys lutea is a native of Southern Europe, extending from Portugal to Crete and Smyrna, and of the opposite shore of the Mediterranean from Marocco almost to Tunis; it varies much in the breadth of the golden margin of the lip, which is sometimes reduced to a mere border, or altogether disappears, when the species becomes *O. fusca*, Tenore, as well illustrated in Mr. Moggridge's beautiful "Flora of Mentone" (tab. 46), where the question of the specific value of the characters of the genus *Ophrys*, is treated with scientific care, and illustrated with artistic skill, tending as it does to favour Linnæus's sagacious conclusion, that all the European species are referable to one, his *O. insectifera*.

Descr. *Leaves* spreading, linear-oblong, obtuse or subacute, pale-green, one and a half to two and a half inches long. *Scape* four to seven inches tall, stout, many-flowered. *Bracts* erect, sheathing, oblong, subacute, appressed. *Flowers* three-quarters to one inch in diameter. *Sepals* equal, oblong, obtuse, incurved, green. *Petals* much smaller, linear-oblong, obtuse or truncate, yellow or yellow-green. *Lip* nearly quadrate, golden-yellow with a purple disk, and a contracted base, convex, three-lobed towards the tip; mid-lobe with two rounded lobules, lateral also rounded, rarely oblong; disk velvety, maroon-purple, with a forked polished blue or violet centre like that of *O. Speculum*, but smaller; the tip varies extremely in shape, lobing, and the disposition and extent of these coloured bands.—*J. D. H.*

Figs. 1, 2, and 3, spikes from different plants:—*natural size;* 3, flower from fig. 1:—*magnified.*

2.

1.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5942.

LITHOSPERMUM PETRÆUM.

Native of Dalmatia.

Nat. Ord. Boragineæ.—Tribe. Lithospermeæ.

Genus Lithospermum, *Linn.* (*A. DC. Prodr.*, vol. x. p. 73).

Lithospermum *petræum*; fruticulus diffusus ramosus pilis brevissimis adpressis incanus, foliis lineari-oblongis linearibusve obtusis v. subacutis marginibus recurvis subtus incano-sericeis, racemis cymosis junioribus subcapitatis, calycis sericei lobis subulato-lanceolatis, corolla glabra tubo cylindrico calyce duplo longiore, lobis brevibus obtusis erectis, antheris exsertis, nuculis ovoideo-attenuatis brevissimis.

Lithospermum petræum, *A. DC. Prodr.*, vol. x. p. 82; *Regel Gartenfl.* vol. iii. p. 104.

L. rosmarinifolium, *Reichb. Fl. Excurs.*, vol. i. p. 337 (*non Tenore*).

Echium petræum, *Trattenich ex Visiani Fl. Dalmat.*, p. 34; *Host. Pl. Aust.*, vol. i. p. 241 (*excl. syn. Tourn.*); *Lindl. Bot. Reg.*, 1843, t. 26.

A perennial hardy herbaceous rock-plant, native of Dalmatia, whence it was originally introduced into England by General Baron Von Welden, and flowered in a cool greenhouse of the Royal Horticultural Gardens in April and May, 1845. There Dr. Lindley describes it as "the gayest little plant possible, with neat green leaves, stiff stems, and pale blue flowers, which are pink before they open." The figure in the *Botanical Register* represents a much broader-leaved plant than that here figured, which was grown in Mr. Backhouse's Nursery at York, and precisely accords with native specimens, in the Kew Herbarium, collected by Dr. Alexander Prior, F.L.S., near Ragusa, in 1843, and others from Professor Visiani, collected in 1832. Owing, no doubt, to its easily damping off, it had long disappeared from cultivation in England, till re-introduced through those indefatigable horticulturists, the Messrs. Backhouse, to whom

I am indebted for the specimen figured here, which flowered in June, 1871. It would no doubt succeed under the same treatment as Cape Heaths, if provided with a stiffer soil, plenty of stones in the pot, and kept cool in winter. The English autumn and winter are probably far too damp to admit of its being cultivated out of doors with success.

Descr. A small much branched undershrub, six to eight inches high, hoary with appressed short close-set hairs. *Stem* woody below, soon dividing into numerous stiff erect slender simple leafy branches. *Leaves* one to one and a half inches long, by one-twelfth to one-sixth inch broad, narrow-linear or linear-oblong, obtuse or subacute, green above, silkily hoary below, margins recurved. *Flowers* in simple, forked or branched short revolute terminal dense cymes, shortly pedicelled, one third of an inch long. *Calyx* 5-partite, hoary, segments subulate-lanceolate. *Corolla* glabrous, deep violet-blue, pinkish-purple in bud, tubular; tube twice as long as the calyx; lobes short, erect, rounded. *Stamens* with large exserted anthers. *Style* very slender, exserted.—*J. D. H.*

Fig. 1, flower; 2, ovary, style, and stigma:—*magnified.*

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